The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING

VOL. 23. NO. 29 TULSA, OKLAHOMA, DECEMBER 11, 1924

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Crude Production Shows Slight Decline

Average daily production in United States week ended Dec. 6, 1,955,335 bbls. Loss from previous week, 1,445 bbls.

No Wells Completed in Wortham Pool. Penn and Others' Important Test Somewhat Disappointing

Highest daily average estimated production this year, week ended August 23, 2,057,319 bbls. Lowest January 12, 1,871,143 bbls.

By Andrew M. Rowley

With no wells completed in the new Wortham Field in East Central Texas during the past week and the test there which has been the center of interest for more than a week failing thus far to show anything out of the ordinary, except that it did not flow oil although six feet in the sand, the industry was given somewhat of a breathing spell before the real extent and future possibilities of the Wortham area become known. The Mid-Continent area as a whole recorded a decline in production during the week of nearly 2,000 barrels a day, Oklahoma being responsible as the output there fell off nearly 5,000 barrels a day, more than offsetting the gain in average output at Wortham of 2,470 barrels daily. This gain resulted from the greater flow of the Boyd Oil Company's No. 1 Simmons, the second producer in the Wortham Field, the well being opened somewhat and permitted to flow more than it had during the previous week.

The well in the Wortham Field which has been the cynosure of attention since the bringing in of the Simmons well is No. 1 McCorkle of R. R. Penn and the Atlantic Oil Producing Company, located about 1¼ miles north of the Boyd Oil Company's producer. On Tuesday of this week, the test was breaking down to bail after drilling to 2,994 feet, sand having been topped at 2,986 feet. The outcome of the well thus far may be said to be somewhat disappointing as a far better showing than what it has made had been expected. Operators felt the well may be located too far north and, possibly, too far east. The test of the Kirby Petroleum Company, within half a mile of the Simmons well, on Tuesday of this week was drilling at 2,961 feet. It was the intention to carry the well to 2,971 feet before starting to bail.

The importance of the well of Penn and others lay largely in defining the extent of the pool. It shows a deep dip in the sand in that section. Unless the well makes a much better showing than it has, it may have considerable effect upon drilling operations east of the townsite of Wortham where there was great activity based on expectations the Penn well would come in a good producer. Early this week there were 45 wells drilling in the Wortham Pool with 125 derricks already up. It will be but a comparatively short time until a number of these wells will be completed and production of the pool then is expected to increase by leaps and bounds. Many of the wells drilling are in what is really proven territory so there is little doubt as to their outcome.

California registered an increase in production of 7,000 barrels a day during the past week, again reaching within a fraction of the 600,000-a-day mark. The Dominguez Field is showing the greatest increase on the Coast and is expected to continue to show gains in output for some time. Rosecrans will be developed more slowly and the full extent of its production probably will not be felt for some months yet. It is believed shipments of petroleum from California to eastern points will continue at least until April or May, possibly later if Dominguez continues to increase its output and the production of the State holds up as it has been doing during the past few weeks. Operators in California, however, feel the point is not far distant when California markets wil be able to absorb all the crude and refined products produced and manufactured in that territory which means refiners on the Atlantic Seaboard will again have to look to the Mid-Continent and Gulf Coast areas for much of their crude supplies.

At the close of last week, a decline in production was shown in all the large pools in Oklahoma, indicating a possible further decrease in production during this week. An important test being drilled by the Midwest Refining Company in the Salt Creek Field encountered such a strong gas pressure in the Dakota sand the control head was blown off. The well is being drilled to test what is believed to be the center of the Lakota sand structure and, if the data gathered regarding this structure is correct, the well is expected to produce as much or more than any other producer yet found in the field which would mean in excess of 20,000 barrels daily.

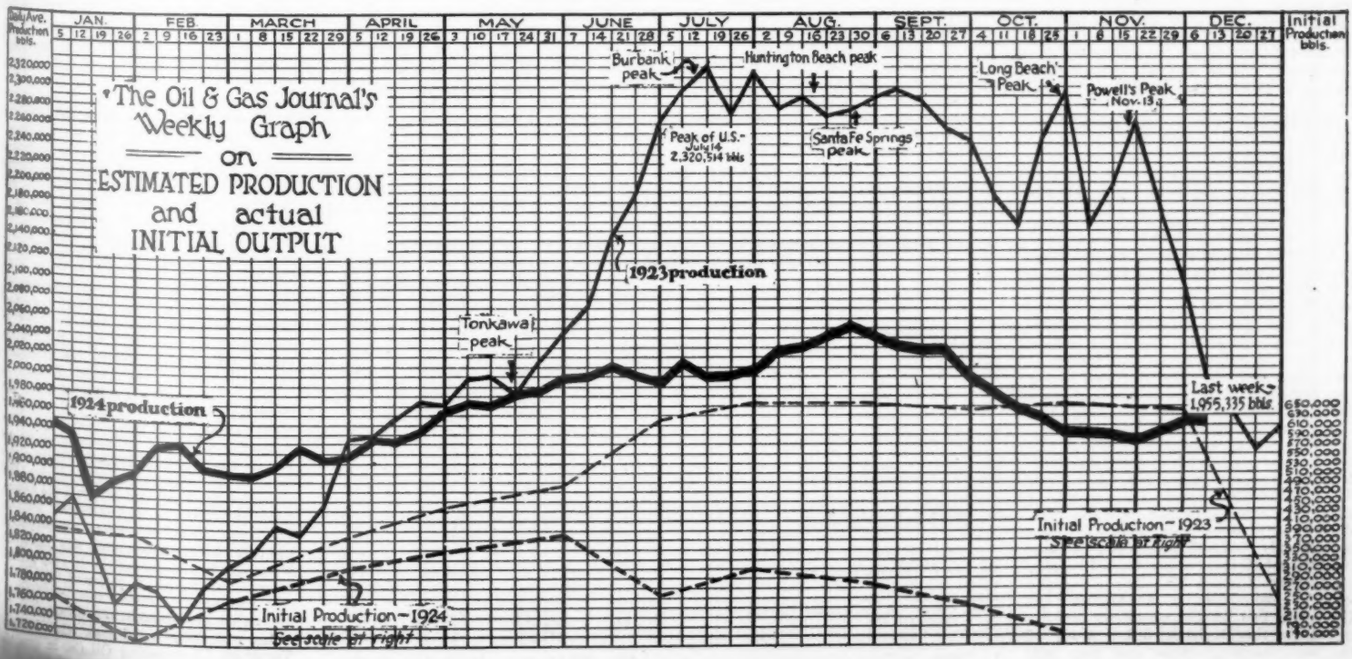
The embargo which has been placed on crude oil receipts by the National Transit Company in northwestern Pennsylvania, was lifted on Monday of this week, much to the gratificaton of producers in that section. The company stated the action was made possible by the hearty cooperation of producers, shippers and refiners with the result 50,000 barrels of crude had been disposed of which is the equivalent of about one week's production along the company's lines.

PRODUCTION IN THE UNITED STATES

Estimated daily average crude oil production in the United States for the week ended December 6, and a comparison with previous week follows:

Oklahoma—Northern Fields:	Dec. 6	Nov. 29
Tonkawa	108,220	108,140
Burbank	71,470	72,050
Other Osage Fields	40,330	40,690
Cushing and Shamrock	23,620	23,645
Bristow and Eastern Bristow	39,340	39,540
Cromwell	45,040	47,870
Papoose	29,470	29,190
Northern Miscellaneous	100,540	101,650
Southern Fields	67,985	68,220
Total Oklahoma	526,015	530,995
North Louisiana	55,475	55,605
Arkansas—		
El Dorado and Calion	10,690	11,205
Smackover Light	30,665	31,025
Smackover Heavy	66,670	68,770
Stephens and Nevada	3,575	3,460
Total Arkansas	111,600	114,460
North Central Texas	134,431	131,450
Powell	68,100	69,300
Mexia, Currie, Richland, etc.	49,260	46,800
Wortham	6,970	4,500
Kansas	87,650	88,250
Total Mid-Continent Area	1,039,501	1,041,360
Gulf Coast	80,224	82,175
Southwest Texas	43,595	44,665
Eastern	106,200	106,050
Rocky Mountain Area	86,815	90,530
California—		
Santa Fe Springs	52,000	51,500
Long Beach	128,000	126,000
Huntington Beach	41,000	41,500
Torrance	45,000	45,000
Dominguez	42,000	38,000
Remainder of State	291,000	290,000
Total California	599,000	592,000
Total United States	1,955,335	1,956,780

DECREASE, 1,445 BARRELS



New Sidelights on the Burbank Field

Coming Lease Sale Draws Attention Once More to That Area of Remarkable Bonus Prices. Some Osage History

By James McIntyre

Only six quarter sections of close-in Burbank leases will be offered for sale at the next auction sale of leases which will be held at Pawhuska on Thursday, December 18, and these leases are not causing the interest that acreage in Burbank did in times past.

It is not expected that any of the Burbank tracts will command a large price, as prices go in that part of the great Osage territory.

The southwest quarter of Section 2-27-5, one of the leases to be auctioned, is north of a Carter Oil Co. lease for which that company paid $310,000 at the last sale and which up to November 26 had produced $296,597 bbls. from 11 wells. It is east of a lease of the Gypsy Oil Co., for which $151,000 was paid and which since May 1924 has produced 48,293 bbls. from 7 wells.

Another tract, to be sold, the northeast quarter of Section 11-27-5, is east of the Carter Oil Co.'s lease above mentioned and north of a Phillips Petroleum Co. property purchased for $505,000 at the last sale and which had produced 290,115 bbls. up to November 26 from 16 wells. Just east of the latter tract is the southwest quarter of Section 12-27-5, which will be sold, and this lease is north of the Carter Oil Co.'s $405,000 tract bought at the last sale which had produced only 53,018 bbls. from 10 wells up to the closing days of November.

In the extreme southern part of the Burbank area three leases will be put up for sale. One of these, the northeast quarter of Section 20-26-6 is south of a Cosden Oil & Gas Co. lease, which cost $11,000 in bonus and has been producing since June 1923 with a total output of 242,662 bbls. from 10 wells. Just east of it is the northwest quarter of Section 21-26-6, which the Carter Oil Co. bid in for $13,000 at the last sale, which was turned down by the Department of the Interior. The lease is south of a property of the Carter Oil Co., for which $360,000 was paid and which has been producing since June 1923, with a total production of 513,940 bbls. from 16 wells. The northeast quarter of Section 21-26-6, another lease for sale, is south of a $127,000 lease of the Carter Oil Co., producing since June 1923, with a total output of 222,817 bbls. from 11 wells. The above production figures and all others mentioned in this article are up to November 26.

The Burbank Field, including the Kay County extension has produced 91,183,118 bbls. from 1,649 wells. The Osage County side of the field has produced 76,312,097 bbls. from 1,454 wells. The field has been producing since May 1920.

Startling Extremes in Value

Much has been written on the high price of acreage the Osage Indians have been able to get out of oil companies and individuals bidding in sharp competition. As high as $1,990,000 has been paid as a bonus for a quarter section in that field, while as low as $500 was paid years ago when the Burbank region was purely wildcat and not looked upon very favorably by the oil fraternity. The Carter Oil Co. paid $500 for the southeast quarter of Section 5-26-6 and has had a gross production of 1,102,091 bbls. from the property since February, 1921. The $1,990,000 lease, the northwest quarter of Section 14-27-5, has been producing only since May 1924, but has shown only 247,877 bbls., and is now producing 586 bbls. a day from 16 wells, an average of about 37 bbls. per day per well. It is owned by the Midland Oil Co. The two leases mentioned are extremes in the Burbank, but a study of the accompanying table and map will develop some very interesting side lights on values in that field.

The Heart of the Field

The very heart of the field is Section 24-27-5, which has produced 8,327,025 bbls. of crude, or 13,011 bbls. per acre and 130,110 bbls. per well. The four leases comprising this section are owned by the Gypsy Oil Co. and the Phillips Petroleum Co. and Skelly Oil Co. The Gypsy company owns the northwest quarter, which has produced 2,507,599 bbls., and the southeast quarter, which has produced 2,104,858 bbls. The Phillips-Skelly combination owns the northeast quarter, which has produced 1,702,080 bbls. and the southwest quarter 2,104,858 bbls. These were all high cost properties, their total bonus price having been $5,150,000.

The cheapest and best paying section of land in the whole field was Section 5-26-6, which cost a total of $2,900 in bonuses and has returned to its owners, the Gypsy Oil Co., Carter Oil Co., Simons, Moore and others and the Devonian Oil Co., a total of 4,020,300 bbls.

Will Burbank "Pay Out?"

Will Burbank ever "pay out" is a question often asked. Will the $52,241,000 paid in bonuses and the approximately $43,620,000 paid for drilling the wells on the Osage side of the field, a total of $95,861,000 for bonuses and drilling alone, to say nothing of the millions spent in operating the properties, ever come back so that the whole field will show a profit? It is reasonably safe to say that it will as a whole, but not to all the producers operating in the field. Some operators have already reaped a fat harvest off of Burbank, but these were the ones who got in very early. Ike Simons and his partners (Clint Moore & Co.), the Devonian Oil Co., the Roxana Petroleum Corp. and Marland Refining Co. partnership, the Roxana Corp. alone, the Producers & Refiners Corp., the Tidal-Osage Oil Co., and the Laurel Oil & Gas Co. all cleaned up long ago. Their acreage was bought on a wildcat basis and was favorably located and produced largely. On the other hand some of the companies that paid tremendous prices at recent sales may never get all their money back.

Bonus Cost Per Barrel

A tabulation of the relation of the bonus price to the quantity of production thus far obtained brings out some interesting results. It cost the Midland Oil Co. an average of $5.16 in bonus alone for every barrel of oil its leases had produced up to the close of November while the Devonian Oil Co., with one lease that cost only $700 and which had produced 868,649 bbls., paid in bonus an average of 8/100 of a cent per barrel. The cost per barrel in bonuses to other companies has been as follows: Carter Oil Co., 39 cents; Comar Oil Co., $1.91; Cosden Oil & Gas Co., $1.87; Gypsy Oil Co., 63 cents; Kewanee Oil & Gas Co., $1.60; Laurel Oil & Gas Co., about 4/10 of a cent; Gardner Petroleum Co. and Carter Oil Co., as partners, a trifle over 4/10 of a cent; Gardner Petroleum Co. and Marland Refining Co., $2.38; Lorraine Petroleum Co., 23 cents; Phillips Petroleum Co. and Delmar Oil Co., partners, 2 cents; Mid-Kansas Oil & Gas Co., (some of the acreage formerly owned by the Waite Phillips Co.), $1.52; Phillips Petroleum Co., 98 cents; Phillips Petroleum Co. and Skelly Oil Co., partners, 85 cents; Peters & Oliphant, $1.06; Prairie Oil & Gas Co., 88 cents; Producers & Refiners Corp. and Marland Refining Co., partners, 41 cents; Sinclair Oil & Gas Co., 49 cents; Skelly Oil Co., $2.39; Tidal Osage Oil Co., 27 cents; Tidal Osage Oil Co. and Carter Oil Co., partners, less than 3/10 of a cent; Twin State Oil Co., $1.20; The Texas Co., 4.01.

If the Indians' share of the production was deducted from the gross output the above prices would all be considerably increased.

The Sale on December 18

One hundred and seventy-four leases east of Range 7, comprising 27,649.73 acres will be offered at the sale on December 18 and 14 leases west of Range 8, comprising 2,240 acres. The most interesting properties on the east side will be those where there is a possibility of Wilcox sand production but no large prices are expected to be paid for leases east of Range 7, and many of the leases will not receive bids.

It will be news to some of our readers to know that at one time one man held an oil and gas lease on the entire Osage Nation. The Osage Nation or reservation, now designated as Osage County, in round figures contains 1,500,000 acres. It was acquired from the Cherokee Nation on March 3, 1872, (actual deed dated June 14, 1883) for a cash consideration of 70 cents per acre, amounting to $1,099,137.41. Until 1907, the reservation was owned in common by the tribe. In 1907 a census and final roll of the Osage tribe was made showing a membership of 2,229. Then the land was allotted, or divided among the members of the tribe, each receiving 657 acres, a trifle more than four quarter-sections. However, the oil, gas, coal and other minerals covered by the lands were reserved to the Osage tribe of Indians for a period of 25 years after April 8, 1906. By a later act of March 3, 1921, this tribal ownership of the mineral estate has been extended until April 8, 1946, when it shall terminate.

The Foster Lease

The original oil and gas lease upon the Osage reservation was executed March 16, 1896, by the principal chief of the Osages, under the authority of its tribal council, in favor of Edwin B. Foster, of New York City. The lease became valid when approved by the Secretary of the Interior. Its term was flat 10 years. Royalties were $50 annually for each gas well and one-tenth of the oil produced. The lessee was required to begin prospecting within six months and, failing to discover either oil or gas in paying quantities within 18 months after the date of the lease, the lease should terminate. No cash bonus was paid on account of the lease. On March 3, 1905, this lease was renewed; that is, its term was extended for an additional term of 10 years, ending March 16, 1916. The renewal, however, was limited to 680,000 acres, all lying in the easterly part of the reservation. Under the renewal, the royalties were fixed at $100 annually for each gas well and one-eighth of the oil produced.

Oklahoma's First Wells

On May 8, 1896, the lessee assigned his lease to the Phoenix Oil Co. which, in turn, drilled a number of wells. These were the first wells for oil and gas drilled in Oklahoma. An area of the lease 6 miles by 10 miles in dimensions was transferred to the Osage Oil Co., which was controlled by the Pioneer interests, who held the original lease. The Mechanics' Savings Bank of Westerly, R. I., financed the operations of both companies. The operations were unprofitable, resulting in the virtual insolvency of the companies and forcing the Mechanics Savings Bank into liquidation. In January, 1902, all interests in the lease were concentrated in the Indian Territory Illuminating Oil Co. In turn, prior to March 16, 1906, it executed sub-leases upon 680,000 acres in favor of 156 different sub-lessees.

Market 60 Miles Away

No oil was discovered until the completion of the third well drilled upon the reservation, near Bartlesville, on October 28, 1897. The nearest market for such oil was 60 miles away. In the Osage reservation there were no roads, no bridges across streams, no railroad. Until the summer of 1902, all efforts to induce other operators to enter the field were unavailing. About this time the Indian Territory Illuminating Oil Co., owning the lease, adopted the policy of executing sub-leases in favor of other operators. On January 1, 1903, 30 wells had been drilled upon the reservation: 17 produced oil, 2 gas, and 11 were dry holes. No pipe line served the reservation until August, 1904, when the Prairie Oil & Gas Co. completed the extension of its pipe line from Caney, Kans.

No oil or gas was marketed from the wells upon the reservation until the year 1903, during that year the Osage tribe receiving royalties on account of oil or gas in the sum of $3,779.00. During the years from 1903 to 1912, inclusive, the royalties from oil and gas paid the Osage tribe amounted to $2,784,985.98. During the year 1903, the gross oil production upon the Osage reservation was 59,437.67 bbls. However, during the 10-year period from 1903 to 1912, inclusive, the total oil production upon the reservation amounted to 49,495,019.06 bbls.

In executing sub-leases, the Indian Territory Illuminating Oil Co. in

BONUS PRICES PER BARREL FOR THE OIL THUS FAR RECOVERED FROM THE BURBANK FIELD, OSAGE COUNTY, OKLAHOMA

Company—	No. Wells	Bonus Paid	Total Prod. Bbls.	Bonus Price per Bbl.
Carter Oil Co.	219	$4,029,100	10,321,492	$ .39
Comar Oil Co.	7	410,000	214,851	1.91
Cosden Oil & Gas Co.	105	4,981,000	2,672,435	1.87
Devonian Oil Co.	16	700	868,649	.0008
Gypsy Oil Co.	197	9,058,200	15,021,956	.63
Kewanee Oil & Gas Co.	25	765,000	478,698	1.60
Laurel Oil & Gas Co.	16	3,000	773,029	.0039
Gardner Petroleum Co.-Carter Oil Co.	15	5,200	1,234,751	.0042
Gardner Petroleum Co. and Marland Ref. Co.	5	325,600	132,216	2.38
Lorraine Petroleum Co.	15	100,000	437,119	.23
Midland Oil Co.	37	3,631,000	702,735	5.16
Phillips Petroleum Co.-Delmar Oil Co.	16	41,000	1,853,656	.02
Mid-Kansas Oil & Gas Co.	39	2,775,000	1,821,561	1.52
Phillips Petroleum Co.	111	4,453,000	4,517,189	.98
Phillips Petroleum Co.-Skelly Oil Co.	174	10,027,100	11,877,162	.85
Peters & Oliphant	2	82,000	76,983	1.06
Prairie Oil & Gas Co.	106	4,935,000	5,598,000	.88
Producers & Refiners Corp.-Marland Ref. Co.	13	136,000	333,886	.41
Producers & Refiners Corp.	16	2,100	1,385,992	.0015
Roxana Petroleum Corp.	13	261,000	1,013,713	.25
Roxana Petroleum Co.-Marland Refining Co.	42	15,600	2,492,293	.0063
Simons, Moore et al	29	3,900	1,515,269	.0026
Sinclair Oil & Gas Co.	145	3,797,300	7,820,107	.49
Skelly Oil Co.	22	1,240,000	561,739	2.39
Tidal Osage Oil Co.	27	301,000	1,116,748	.27
Tidal Osage Oil Co.-Carter Oil Co.	16	26,000	931,247	.028
Twin State Oil Co.	24	605,800	503,485	1.20
The Texas Co.	6	141,000	35,126	4.01
Total	1,454	$52,241,000	76,312,097	$ .68

cally all cases reserved a sub-royalty or overriding royalty ranging from one-fortieth to one-fifteenth of the oil produced.

It will be recalled the original Foster lease covered a period of 10 years, beginning March 16, 1896, and the renewal or extension of the sub-lease covered an additional period of 10 years beginning March 16, 1906, and ending March 16, 1916. The so-called "Foster lease" and its renewal then came to an absolute end. At that time the 680,000 acres embraced in the renewal were owned by the Indian Territory Illuminating Oil Co., and 173 sub-lessees or their assigns. There had been developed for oil in quarter-section units about 16,760 acres. As a whole, the record of the operators was disastrous. Expenditures had not been returned in the proceeds of oil and gas produced and marketed.

Here it may be of interest to note what disposition was made of the 16,760 acres of producing lands. The story follows:

The Osage Tribal Council, with the approval of the Secretary of the Interior, executed renewals of their leases to the operating sub-lessees. In all cases where the oil production upon quarter-section units was less than 25 bbls. per day, the renewal was executed without bonus. Approximately 19 quarter-sections, or fractional quarter-section units, of developed oil lands produced an average of 25 bbls. or more per day, and on June 21, 1916, these 19 tracts were sold at public auction under terms giving the operating lessee the right to purchase his tract for the highest bid submitted by anyone. In nearly all cases the operating lessee succeeded in acquiring a renewal of his lease for a reasonable cash bonus. The new leases were written for the term expiring April 8, 1931. The rate of royalty was fixed at one-sixth, or 16⅔ per cent of the gross oil produced where the wells upon the lease produced an average of less than 100 bbls. per day, and one-fifth, or 20 per cent, royalty on each lease where the wells averaged 100 bbls. or more per day. The renewal leases covered the oil rights alone. Gas leases upon the gas rights afterwards were sold separately at public auction.

By an act of Congress March 3, 1921, the term of all oil and gas leases upon the Osage reservation was extended until April 8, 1946, and as long thereafter as oil or gas may be produced.

The thanks of the writer are due to the head of one of the largest Mid-Continent producing companies for the facts set forth in the foregoing short history of the Foster lease and the events leading from it.

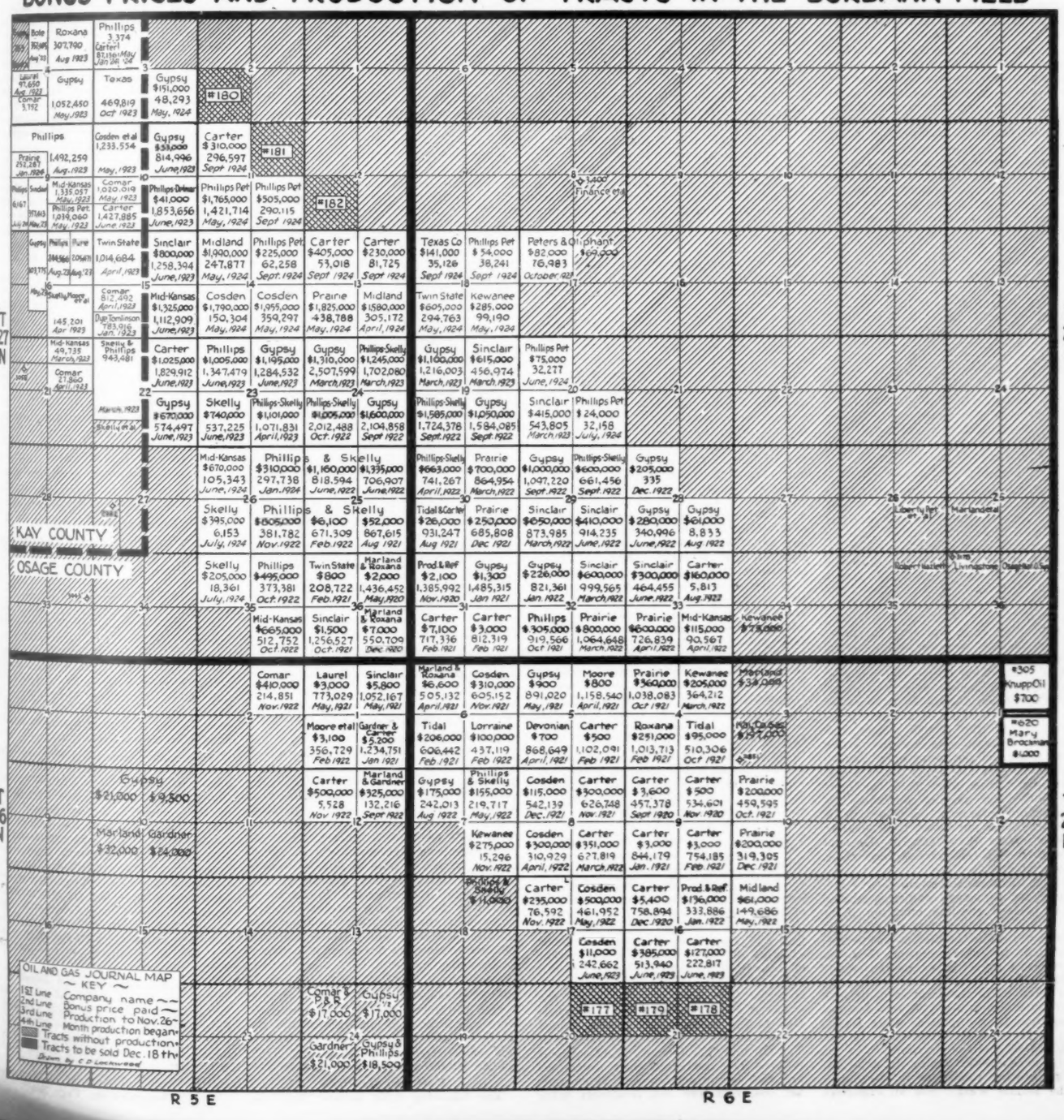
Production of the Burbank Field in Osage and Kay Counties, Oklahoma, From Its Beginning in May, 1920, to November 26, 1924

OSAGE COUNTY

Owner, location and date of first production—Carter Oil Co.:	No. of Wells	Bonus Paid	Ttl. Prod. (Bbls.)
NW 12-26-5, November, 1922	2	$ 500,000	5,528
SE 5-26-6, February, 1921	16	500	1,102,091
SE 8-26-6, March, 1922	16	351,000	627,819
NE 8-26-6, November, 1921	16	300,000	626,748
NE 9-26-6, November, 1920	10	500	534,601
NW 9-26-6, September, 1920	5	3,600	457,378
SW 9-26-6, January, 1921	12	3,000	844,179
SE 9-26-6, February, 1921	16	3,000	754,185

(Continued on Page 106)

BONUS PRICES AND PRODUCTION OF TRACTS IN THE BURBANK FIELD



the accompanying table and map will

Total ..... 1,454 $62,241,000 76,312,097 $ .88

Less Activity in Gasoline Market

Prices Firm in Oklahoma Despite Slow Up in Demand. Strong North Texas Market Aiding Mid-Continent. Fuel Oils Strong. Kerosene Weak

By C. O. Willson

The activity which featured the Group 3 (Oklahoma) refined market the latter part of November and the first two or three days of December has not been so apparent this week although prices are still generally firm. Straight run gasolines after advancing an additional ¼ cent the middle of last week have not changed with a slump in new orders since Monday which has led some of the trade to fear the product might lose part of the price advance of the previous two weeks. This weakness applied primarily to the 58-60 U. S. Motor grades, the demand for the higher gravities being relatively stronger with less material available.

The market in other products has also been less active since Monday, a condition which can probably be explained in part as being due to the fact that many refinery sales managers and executives are in attendance at the American Petroleum Institute meeting at Fort Worth. Fuel oils advanced last week to the point where a majority of the refiners were asking $1.20 for all grades of fuel oil up to 26 gravity for immediate shipment with a few scattered sales at higher prices reported. Gas oil also advanced during the week and very little material is now available at 3 cents, the prices ranging up to 3½ cents for the zero cold test stock. This advance is a reflection of both an improvement in demand and higher fuel oil prices. Refiners are still securing as much for their higher gravity fuel oils as they can obtain for gas oil.

Kerosene of all grades is offered freely with plenty of distillate also available to supply a demand which in Group 3 is still slow. Despite the fact that the supply exceeds the demand prices are generally unchanged, the only price concessions reported during the past week applying to the 42-44 grade.

Unusual Situation

The market situation in the Mid-Continent area at the present time is unusual in that Group 3 and Kansas are the weakest spots in the entire area as regards gasoline and kerosene. Aided by a continued strong export and domestic market, the North Texas and North Louisiana gasoline markets have advanced more during the past week than did Group 3.

For the first time this year the present spot market in gasoline in North Texas is from ¼ to ½ cent higher than in Oklahoma. This differential made it possible for Oklahoma refiners to share in a little export business during the past week. This class of business ordinarily goes to the North Texas and Louisiana refiners, due to the lower freight rates and the lower open market prices which generally apply to the North Texas area. The latter field has been aided with large gasoline purchases by major refining organizations operating in Texas who have purchased from smaller concerns rather than increase the output of their own refineries or lower their gasoline stocks.

Future Uncertain

There are so many conflicting angles in the present gasoline situation it is rare to find a market observer who will venture a definite prediction as to the future. As indicated so far as Group 3 is concerned prices have apparently advanced as far as they will go until something develops in the form of additional export and domestic buying or advances materialize in the posted crude schedules or tank wagon quotations in the Standard of Indiana territory. No increase in domestic buying is expected, due to weather conditions in the States of the Middle West. Not all exporters have withdrawn from the market but many of the trade believe these buyers have about covered their immediate requirements and will wait at least until after the first of the year before entering the market again with large purchases. Either a crude or tank wagon advance would be reflected in higher gasoline prices at the refineries of the Mid-Continent but these possible developments are as uncertain as they were a week or a month ago. The trade is divided as to the probability of a crude advance and this division is reflected in the attitude in regard to the refined market. Many feel the advance in posted crude schedules will be announced before the first of the year while others are equally confident any change in posted crude schedules will not develop until it can be definitely determined whether or not the new Worthan Field in Texas is to develop into another major pool.

If the gasoline market has to depend on the domestic demand alone during the remainder of the month no further price advances are expected with a possibility that prices will be slightly lower the last half of the month. Refinery operations in the Mid-Continent on December 1 established a new peak, according to the monthly survey of The Oil and Gas Journal which will be found elsewhere in this issue. This report shows Mid-Continent refiners on December 1 were running 383,210 bbls. daily to the stills, an increase of 18,035 bbls. since the November 1 report. The total for December 1 includes the 6,000-bbl. crude runs of the Gulf Refining Co. plant at Fort Worth which was operating on December 1 but which has since been shut down.

Bureau of Mines Report

The accompanying table summarizes conditions in the Mid-Continent refined market and was derived from the Bureau of Mines report for October. The report showing the reduction in gasoline and fuel and gas oil stocks during October explains the improvement in the market of those three products during that month in the Mid-Continent Field. The opposite situation developed in kerosene, the stocks of which increased during October. Due to the improvement in the refined market, as shown in the later reports of The Oil and Gas Journal, Mid-Continent refiners have increased their operations and this is the development which market observers fear will inevitably bring a weakness in gasolines with a seasonal slump in consumption.

REFINED MARKET BAROMETER

Advances in gasolines and fuel oils featured developments in refined markets throughout the United States during the past week. Colder weather has reduced the retail consumption of gasoline but this has not been reflected in a general slow up in demand from the refiners, many of whom are still making deliveries on orders placed last month. The average domestic gasoline price level is higher than it was a week ago with important advances in export naphtha prices in the East. In California buying by large companies has advanced natural gasolines and the product is generally strong in other areas. Fuel oils are in strong demand and prices have advanced where changes have occurred. Kerosenes are dull with lower prices reported in several sections. Lubricating stocks suitable for winter are firm but other grades are slow. The wax market is unchanged.

Mid-Continent—Gasoline market strong in North Texas and North Louisiana and prices higher. Little change in other areas. Strong demand for fuel oils. Kerosene soft in Oklahoma and Kansas. No price changes in natural gasolines and blends. Neutrals slow. Wax lower.

Atlantic Seaboard—Advance in export naphthas features market. Domestic gasoline market strong. Kerosene dull. Fuel oil firm. Lubs quiet. Heavy export movement.

Pennsylvania—Neutral market advances rapidly with little material available. Less demand for steam refined stocks. Gasoline prices advanced following recent tank wagon change. Kerosene stronger. Fuel oil and wax strong.

California—Heavy purchases by Standard and Shell Companies bring advances in natural gasolines, especially the absorption grades. Kerosenes and engine distillates soft. Fuel oil firm. No change in lubs.

Chicago—Gasoline market active despite lessened consumption due to cold weather extending over large part of Middle West. Kerosene slow and distillates not active. Fuel oil advancing. No change in lubs.

latest report of the Bureau of Mines gives a good insight in regard to the statistical position of fuel and gas oil at the present time:

	Days Supply Nov. 1, 1924	Days Supply Oct. 1, 1924	Days Supply Oct. 1, 1923
United States	47	50	44
West Coast	64.9	62	44.5
East of West Coast	31.6	34.5	43.4
Kansas-Oklahoma	28.6	35.3	22

This shows that the statistical position of fuel and gas oil outside of the West Coast is steadily improving. Outside of the West Coast on November 1 there was only 31.6 days' supply on hand based on current consumption contrasting with the 43.4 days' supply on October 1, 1923, and 34.5 days on October 1 of this year. The Kansas-Oklahoma situation also showed a distinct improvement during the month of October. The table supports the contention of those who have for several months maintained that the fuel oil price advances outside of California were justified.

According to buyers only small shipments of fuel oil are available in Group 3 regardless of price. Several refiners are moving the few cars a week which they have to offer to Oklahoma buyers, absorbing a part of the freight rate advantage. The 24-26 grade was selling at $1.20 with $1.15 the bottom on the lower gravities. Gas oil as previously explained also advanced ⅛ to ¼ cent.

MID-CONTINENT REFINERY OPERATIONS
(Derived from Bureau of Mines Report.)

October	No. of Plants	Av. Dy. Crude Runs	Gaso. Stocks Nov. 1	Kero. Stocks Nov. 1	Fuel Oil Stocks Nov. 1
Oklahoma-Kansas	62	227,744	107,337,922	25,873,245	122,196,712
North Central Texas	40	88,549	13,377,854	13,019,605	62,066,569
North Louisiana-Arkansas	13	38,235	3,499,350	1,011,651	14,637,105
Total	115	354,528	124,215,126	39,904,501	198,900,386
September	**No. of Plants**	**Av. Dy. Crude Runs**	**Gaso. Stocks Oct. 1**	**Kero. Stocks Oct. 1**	**Fuel Oil Stocks Oct. 1**
Oklahoma-Kansas	62	224,739	133,567,489	19,637,227	133,182,416
North Central Texas	40	88,432	19,732,447	12,617,605	60,293,235
North Louisiana-Arkansas	13	41,525	3,129,130	865,012	15,179,196
Total	115	352,746	156,429,066	33,169,844	208,655,846

Another factor in the present situation which has been overlooked by many has to do with the fact that while gasoline stocks are low in the Mid-Continent territory there are still large supplies in the hands of large companies adjoining the Mid-Continent. The gasoline stocks in Kansas, Oklahoma, Louisiana and Texas totaled 372,413,685 gallons although only 124,215,126 gallons were in the Mid-Continent Field. The fact that 115 refiners in the Mid-Continent had the 124,315,126 gallons and 17 refiners in the Gulf Coast area the remainder is significant in showing the concentration of stocks in the hands of the larger companies.

Gasolines and Naphtha

Many refiners are asking 9 cents for U. S. Motor, 58-60 gasoline. Others were selling at 8¾ cents. Considerable material at the latter price was being offered by marketers who bought for December delivery as far back as October and are now anxious to sell. This material will have to be absorbed by the market or lower prices will result. Some marketers will be able to sell at 8 cents or lower and still show a profit in the transaction. Reflecting the varying views regarding the December market a month to two months ago, a few refiners are making deliveries on gasoline sold in October as low as 7 cents for delivery in December.

Two companies are reported to have paid 11½ cents for 64-66, 375 for export during the past week. These purchases were not large. A majority of the refiners are still asking 11½ cents with a few sales reported at 11¼ and 11¾ cents. Naphtha prices are unchanged.

Fuel and Gas Oils

The following table derived from the

Kerosene and Distillates

According to several representative buyers more kerosene has been offered them during the past week than at any time since last summer. Purchases of the 42-44 grade were made for resale at 4½ cents. The refiners, however, were still asking 4⅝ for the 41-43, water white. Sales of prime white grades were made as low as 4 cents. The domestic demand has slumped although many refiners still claim this is a temporary development and they are holding their output in expectation of a better demand in the near future. There is no export buying from Oklahoma plants.

Those who keep in close touch with the distillate market state that the consumption has greatly increased during the past month. They explain the failure of the refined market to respond with higher prices as being due both to the weakness in the kerosene market and the further fact that refiners accumulated large stocks during October and early November due to the warm weather and these stocks have not yet been depleted to the point where price advances could be sustained. Another refiner says the distillate prices are high enough at present and no advances would be justified unless crude is advanced.

Natural Gasolines and Blends

The natural gasoline and blend market resembles that of straight run gasoline. The demand for both products is not so active as a week ago. One large buyer is said to have been offered Grade A at 8¾ cents both in Oklahoma and North Texas. A majority of the larger

(Continued on Page 30)

Record Attendance at A. P. I. Meeting

Teagle Reiterates Stand on Fuel Oil Question. Directors Elected. Group Sessions Attracting Considerable Interest

By James McIntyre

FORT WORTH, Tex., Dec. 11.—The largest attendance ever recorded at a meeting of the American Petroleum Institute marked the fifth annual meeting. Hundreds of men who never have attended an institute meeting were here, among these a large number of manufacturers and disributors of the tools, equipment and supplies used in the industry and a considerable number of foreigners, including a German delegation interested in standardization.

Particular interest this year was centered in the group meetings on Wednesday and Thursday. At these meetings standardization, the uses of fuel oil, taxation and accounting, improved methods in drilling and production operations, transportation, motor fuel and lubrication and other topics vitally important to the oil business were treated by experts and discussed from the floor in some cases.

The convention crowd was representative of every branch of the industry and every section of the country, and few very big men in the oil business are absent.

The opening session of the institute held in the Palace Theater was attended by a crowd that filled the large auditorium. President Thomas A. O'Donnell opened the meeting and his address was followed by that of Charles E. Mitchell, president of the National City Bank of New York, and that of Walter C. Teagle, president of the Standard Oil Co. of New Jersey, the first on "Facing Facts in Petroleum" and the latter on "Overproduction, its Causes and Effects."

W. C. Teagle, president of the Standard Oil Co. of New Jersey, speaking on "Overproduction, its Causes and Effects," reiterated his position that fuel oil is the controlling factor in the petroleum market structure. He said we are nearer the high road of returning prosperity if we admit frankly that most of our troubles are of our own making, and he said larger companies, including his own, are in varying degree responsible.

"I am not predicting the future level of either crude or gasoline prices," he said. "These will be dependent in part on what is realized for fuel oil and the situation of the industry will be improved as the use of fuel oil in competition with coal is decreased and its uses for superior purposes further improved."

Reiterating his opinion that the industry has underestimated the importance of fuel oil as a factor in the price structure, he stated that any price that encourages the uneconomic use of oil should be a warning to the producer.

"Even now we may be following the same path traveled at this time in the past two years," he said, "and is it not apt to lead us to the same condition in which we found ourselves in the two successive summers?"

Mr. Teagle said his company may question the wisdom of higher prices at the present time but that should there be a general advance it will be difficult for it not to follow because of its traditional policy to pay the producer as much as can any other buyer.

Mr. Teagle's adddess in full will be found on page 139 of this issue.

President O'Donnell's Address

In his opening address President O'Donnell, after reviewing the purposes of the American Petroleum Institute and the success of its efforts thus far to function for the good of the public as well as the industry, said its future endeavors would be of a broader nature than ever. It purposed to furnished the public with fundamental facts and to win the confidence of the people in the truth of any statement set forth by the organization. He voiced his confidence in the present national administration and believed that in President Coolidge the country had a man who would give the industry a square deal. He criticized Government interference in business and took issue in a good humored way with Henry L. Doherty, who had recently gone on record as favoring a measure of Government participation in the oil business.

Mr. O'Donnell does not believe that our oil reserves will last only 10 years. He gave it as opinion they would last ten times ten years anad that when present methods of oil production are insufficient we had the Rocky Mountains to fall back on with more oil buried in its shales than the country has ever produced from its wells.

Banker Praises Oil Industry

Reviewing the conditions developed as an aftermath of the war Mr. Mitchell said there are now evidences the world is settling down to a state of stability with many signs pointing to enduring prosperity. In Europe, the reparations question has been settled and industry is generally reviving. All countries, including Russia, are trying to get away from their systems of easy money and to get back to the orthodox principle of finance. It is being recognized that a Government must take in as much as it pays out. The world is returning to normal.

Thomas A. O'Donnell
President, American Petroleum Institute

In this period from which we are emerging the oil industry has figured largely in charges of monopoly control, price manipulation and exorbitant profits. It has been claimed that the oil industry dominates Wall Street and through it the whole country. The antidote is understanding and intelligence. Would that we could foster popular acquaintance and study of the wonderful history of this industry, approached in dramatic interest only by one other and that one intimately related to it, the automotive industry. These two, acting and reacting upon one another and developing together, have exemplified to the highest degree the courage and resourcefulness characteristic of every private industry where service is rendered to the whole body of society under the stimulating and regulating influences of the economic law.

The speaker reviewed the statistical history of the oil business, its growth in crude production from 63,000,000 bbls. in the year 1900 to 732,000,000 bbls. in 1923, and its gasoline production gain from 63,000,000 bbls. in 1900 to 281,000,000 bbls. in 1923 and the vast expansion of capital necessary to thus keep up with the demands made upon the oil industry which were answered in such a degree as to cause a big overproduction of the crude products and an oversupply of refined products.

"But," the speaker said, "the public should bear in mind that the burden of this temporary overproduction is not upon the consumers but upon the oil industry itself which has taken heavy losses as reflected in the heavy depreciation of oil securities, and again, the public should bear in mind that in the face of their very rapidly increasing consumption of oil since 1913, oil products have in every year averaged lower in relation to prices of 1913 than the group of 404 principal commodities included in the price tables of the Bureau of Labor."

The speaker paid high tribute to the business acumen of the heads of the large oil corporations and to the technical men of the industry who made it possible to keep down the prices of oil products by means of a greater refined recovery from crude oil and marvelous distributing and marketing systems which have been built up within the industry.

In emphasizing the future responsibility that lies upon the oil industry, Mr. Mitchell said: "It cannot be supposed that you will go on finding oil pools forever, but if you can keep up the supply until science solves the problems of a substitute the oil industry will have made a record of achievement in service in which every member of this institute may be proud to have had a share. When one considers the industries of the United States whose future is absolutely dependent upon the supply of oil it must be recognized that if there is a hazard in the future of the oil there is, indeed, a hazard in our industrial economic and social life."

All of the institute committees on standardization held meetings on Monday, preliminary to the opening of the convention. The committee on belting held an organization meeting and formulated plans for a complete committee to develop the subject further. The committee on boilers organized subcommittees to to work out details to provide interchangeability and other features that will permit easy assembly of various manufacturers' boilers into complete units for power station, etc. The committee on rotary drilling equipment has its report almost completed and an early action is expected on it.

The committee on rig irons completed its report to go before the directors of the institute Wednesday for final action. The committee's recommendations reduce the sizes of rig irons to three and sand reels from 23 to three. The committee on rigs and derricks held its first organization meeting. Subcommittees were appointed for various districts. It is expected the committee will complete its report during the coming year. The committee on wire rope and Manila cordage was formally organized and preliminary specifications were reviewed. This report is also expected to take shape during the coming year.

The general committee of trade associations on the subject of education and public relations held a meeting Monday and adopted the report of the subcommittee recommending a program of industry and public education to be submitted to a meeting of the board of directors for its action.

R. L. Welch
Secretary and Counsel, American Petroleum Institute

NEW DIRECTORS ARE CHOSEN BY A. P. I OTHERS REELECTED

FORT WORTH, Tex., Dec. 9.—The following new directors were elected by members of the American Petroleum Institute at the general session this evening: Amos L. Beaty, president of The Texas Co.; Roy B. Jones, president, Panhandle Refining Co.; L. V. Nicholas, National Petroleum Marketers Association; W. K. Hughes, Continental Supply Co.; T. B. Gregory, Manufacturers Light & Heat Co.; D. M. Folsom, General Petroleum Corp.; W. G. Skelly, president, Skelly Oil Co., and E. W. Marland, president Marland Oil Co.

The following directors whose terms expired were reelected: L. P. St. Clair, F. H. Hillman, Dave S. Ewing, W. S. Farish, J. H. Markham, Jr., Frank Haskell, George W. Crawford, H. R. Gallagher, R. D. Benson, Edward Prizer, B. G. Dawes, K. R. Kingsbury, Robert W. Stewart, J. Howard Pew, J. E. O'Neil, W. C. Teagle and F. X. Henderson.

TWO-CENT TAX FOR KANSAS

A proposed new highway bill for Kansas will include a 2-cent tax on gasoline, according to W. C. Millar, who will represent Kiowa County in the lower house, and will introduce the administration highways bill. Half of the 2 cent tax, Mr. Miller explained, will go to the State to build highways, and half to the counties to build secondary highways. Motor vehicles will be exempt from property taxation, but State license fees will be doubled and the money used to build a State highway system.

Fuel Oil Production in United States

Oils Run to Stills and Percentages of Gasoline and Gas and Fuel Oils Recovered in the Various Districts in Two Years

By Charles E. Bowles

California is easily the leading fuel oil producing area in the United States.

In the first nine months of 1924 it produced over 3,260,000,000 gallons of fuel oil, or slightly less than one-third of the output of the entire United States.

On the Pacific Coast, only the State of Washington produces coal—and its output in 1923 was slightly less than 3,000,000 tons—or less than 1 per cent of the total coal mined in the United States last year.

But California has been richly endowed with crude oil—and, until the recent development of the Los Angeles Basin fields, the great bulk of California's total production of crude oil—over 1,800,000,000 barrels—has been of relatively low gravity and especially adaptable for use as fuel oil.

Therefore, in California's industrial development, fuel oil has been her major power resource.

In 1923 California produced over 262,000,000 barrels of crude oil, a large part of which either went into storage or was tankered to the great refining centers, principally on the Atlantic Seaboard or the Gulf Coast as is evidenced by the fact that her refineries ran only 151,000,000 barrels to stills. From this throughput she obtained 97,600,000 barrels of fuel oil, or over 64 per cent.

During the first nine months of 1924 California produced 194,000,000 barrels of crude oil. Her refineries ran 115,000,000 barrels to stills and produced over 77,000,000 barrels of fuel oil. Hence from the crude run to stills over 67 per cent of fuel oil was recovered.

With the greatest output and the greatest stocks of gasoline that California has ever known—but with a declining production in the light oil area, the increase in the fuel oil percentage from 64 in 1923 to 67 in the first nine months of 1924 is only natural.

And while of the total oil run to stills in the United States in 1923, California refineries ran over 25 per cent, they furnished almost 34 per cent of the total fuel oil output.

East Coast Throughput

The East Coast refineries ranked next to California as producers of fuel oil, with 20 per cent of the total output of the United States in 1923. These refineries are located in New York, Philadelphia, Baltimore and Boston—in an area that produces no crude oil and whose supply must come by tanker, by pipe line and a small amount by tank car.

The average quality of all of the oils handled by all of the refineries in the East Coast area is best indicated by the fact that in 1923 they made, from the total oils run to stills, 26.6 per cent gasoline and 46 per cent gas and fuel oil, compared with 30 per cent gasoline and 48.5 per cent gas and fuel oil for the entire United States.

In the first nine months of 1924 this area ran 108,000,000 barrels of oils to stills and produced 52,000,000 barrels of gas and fuel oil, or 48 per cent, compared with 46 per cent in 1923, and with California's increase from 64 per cent in 1923 to 67 per cent in the first nine months of 1924.

The refining area which includes western New York, western Pennsylvania, West Virginia and central and eastern Ohio, ran 22,000,000 barrels to stills in 1923 and made 4,787,000 barrels of gas and fuel oil, or 21.8 per cent. In the first nine months of 1924 the refineries in this area ran 17,000,000 barrels of oil to stills. They made 3,413,000 barrels of gas and fuel oil, or 20 per cent, compared with 48 per cent on the Atlantic Seaboard and 67 per cent in California for the same period.

The refineries in the area comprising northwestern Ohio, Indiana, Illinois, Kentucky and Tennessee ran 52,000,000 barrels of oils to stills in 1923 and produced 15,852,000 barrels of gas and fuel oil, or 30 per cent. In the first nine months of 1924 this area ran 44,000,000 barrels of oils to stills and made 12,716,000 barrels of gas and fuel oil, or 28.7 per cent.

In 1923 the refineries in Oklahoma and Kansas ran 72,000,000 barrels of oils to stills and made 30,111,000 barrels of gas and fuel oil or 41.7 per cent. In the first nine months of 1924 the refineries in this area ran 60,751,000 barrels of oils to stills and made 23,120,000 barrels of gas and fuel oil, or 38 per cent—a decrease of almost 4 per cent compared with the output of the same area in 1923.

Gulf Coast Runs

Texas refineries, and this includes the refineries on the Gulf Coast many of which handle heavy crude exclusively, ran 106,000,000 barrels of oil to stills in 1923. They made 50,426,000 barrels of gas and fuel oil, or 47.4 per cent. In the first nine months of 1924 the throughput was 94,000,000 barrels and the gas and fuel oil made was 41,505,000 barrels, or 44.1 per cent—a decrease of 3.3 per cent compared with the output for the year 1923.

The Arkansas-Louisiana area also includes the refineries on the lower Mississippi that operate largely on heavy oils, principally from Mexico. In 1923 the refineries in this area ran about 42,000,000 barrels to stills and made 17,347,000 barrels of gas and fuel oil, or 41.5 per cent. In 1924 the refineries in this area ran 37,000,000 barrels to stills and made 17,170,000 barrels of gas and fuel oil, or 45.7 per cent.

It is interesting to note that in the first nine months of 1924 the refineries in the Arkansas-Louisiana area ran 4,000,000 barrels less oil to stills than during the entire year 1923 and that they made almost exactly the same amount of gas and fuel oil in these nine months that they made in the year 1923, thereby accounting for the increase of 4.2 per cent recovery in 1924 over 1923.

The refineries in the Rocky Mountain area operate exclusively on their own crude. In 1923 they ran 34,000,000 barrels to stills of which over 6,000,000 barrels were "re-runs." They made 13,910,000 barrels of gas and fuel oil, or 41 per cent. In the first nine months of 1924 they ran 26,000,000 barrels to stills and made 9,630,000 barrels of gas and fuel oil, or 37.2 per cent, a decrease of 3.8 per cent from the recovery for the year 1923.

The slow shift, year after year, in the proportions of light and heavy oils from different fields that go to make up our total output of crude oil, the total amount of crude oil above ground, the amount of finished products in storage, the variation in the proportions of the finished products in storage, the condition of the market for petroleum products and the general industrial condition of the country, are all factors that react on each other and that, to a large degree, determine how the refineries will change their "cuts," and make more gasoline and less fuel oil—or vice versa—or run more or less stock to their cracking stills.

Fuel Oil Percentages

The quick reaction from these changing conditions that affect the percentage of each product made, is clearly shown by assembling, in tabular form, the preceding percentages for fuel oil for the year 1923 and for the first nine months of 1924.

Refining Area	Year '23	9 Mos. '24
California	64	67
East Coast	46	48
Pa., etc	21.8	20
Indiana, etc.	30	28.7
Okla.-Kansas	41.7	38
Texas	47.4	44.1
Ark.-Louisiana	41.5	45.7
Rocky Mountain	41.0	37.2
Average for period	48.5	47.1

In 1922 we ran 520,000,000 barrels of oils to stills and made 255,000,000 barrels of gas and fuel oil, or 49 per cent—compared with 48.5 per cent in 1923 and 47.1 per cent in the first nine months of 1924, as shown above.

(Continued on Page 110)

TABLE 2—PRODUCTION, CONSUMPTION, IMPORTS, EXPORTS AND STOCKS OF FUEL OIL, JANUARY 1 TO SEPTEMBER 30, 1924

Month—	Stk. 1st Day of	Prod.	Imports	Exports	Consumption	Stk Last Day of
January	1,515,034,711	1,062,892,393	36,471,249	109,908,000	1,032,946,015	1,471,544,338
February	1,471,544,338	1,025,421,651	59,830,201	112,994,698	952,628,476	1,491,173,016
March	1,491,173,016	1,114,411,725	48,619,520	134,973,335	1,031,767,019	1,487,463,907
April	1,487,463,907	1,116,763,663	41,826,326	120,344,289	989,372,401	1,536,337,206
May	1,536,337,206	1,155,935,780	63,630,173	133,852,785	1,066,387,508	1,555,662,866
June	1,555,662,866	1,106,711,936	45,807,861	143,110,953	946,508,181	1,618,563,529
July	1,618,563,529	1,102,785,843	53,166,789	154,275,024	1,014,289,653	1,605,951,484
August	1,605,951,484	1,167,211,159	52,055,816	156,033,837	1,010,513,665	1,658,670,957
September	1,658,670,957	1,113,911,361	24,160,405	145,440,402	1,010,699,811	1,640,602,510
1924	**1,515,034,711**	**9,966,045,511**	**425,468,340**	**1,210,933,323**	**9,055,112,729**	**1,640,602,510**
1923	**1,304,727,850**	**8,873,122,832**	**408,706,418**	**1,013,357,755**	**8,091,996,352**	**1,481,203,993**
Increase	**16.2%**	**12.3%**	**4.0%**	**19.5%**	**11.9%**	**10.8%**

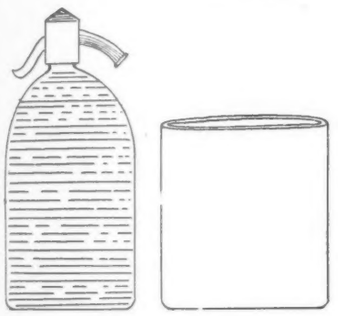
TABLE 1—PRODUCTION OF GAS OIL AND FUEL OIL, JANUARY 1 TO SEPTEMBER 30, 1924, BY DISTRICTS

	East of Mississippi				Mid-Continent				
Month—	East Coast	Pa.	Ind.-Ill.	Okla.-Kans.	Texas	Ark.-La.	Rocky Mt.	California	Total
January	238,252,560	15,615,053	61,179,769	106,804,959	179,922,365	80,838,294	46,214,549	334,064,844	1,062,892,393
February	215,370,105	13,688,154	53,794,361	100,894,782	174,950,945	78,878,445	47,490,115	335,354,744	1,025,421,651
March	237,722,930	15,903,372	61,210,148	105,538,931	216,622,500	68,673,401	47,855,347	360,885,096	1,114,411,725
April	257,719,938	16,723,701	60,301,335	111,414,255	200,375,513	61,368,160	41,138,197	367,722,564	1,116,763,663
May	252,201,935	16,275,579	59,206,112	112,504,052	196,216,462	80,652,218	47,294,505	391,584,917	1,155,935,780
June	262,296,251	17,049,893	52,793,525	107,932,566	181,000,063	70,339,953	45,315,895	369,933,790	1,106,711,936
July	242,444,007	16,981,613	59,494,256	102,210,860	194,349,492	77,808,993	44,061,647	365,434,975	1,102,785,843
August	257,439,067	15,362,250	59,477,736	110,597,535	194,900,834	107,243,113	40,919,133	381,271,491	1,167,211,159
September	218,497,998	15,749,094	66,638,779	113,124,200	204,902,883	95,350,836	44,149,882	355,587,689	1,113,911,361
Total	**2,181,854,791**	**143,348,709**	**534,096,021**	**971,030,140**	**1,743,241,057**	**721,153,413**	**404,439,270**	**3,261,840,110**	**9,966,045,511**
Per Cent	**21.9**	**1.5**	**5.4**	**9.7**	**17.5**	**7.2**	**4.1**	**32.7**	**100.0**
		28.8			**34.4**		**4.1**	**32.7**	**100.0**

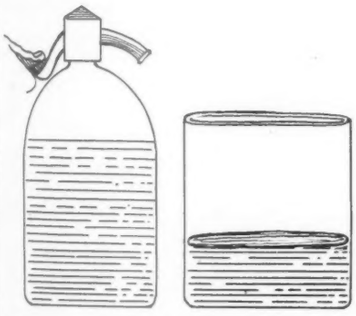
YOU PRODUCERS WHO DON'T BELIEVE IN FLOWING WELLS THRU TUBING

What Do You Say to These Scientific Facts?

1. WHAT HAPPENS TO A WELL FLOWED THRU CASING

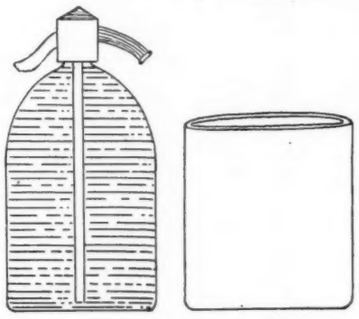


Before Pressure is Released

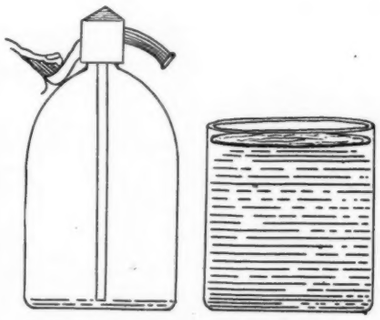


Pressure Completely Exhausted
Small Portion of Fluid Raised

2. WHAT HAPPENS TO A WELL FLOWED THRU TUBING



Before Pressure is Released



Pressure Completely Exhausted
Nearly ALL of Fluid Raised

The oil in a high-pressure well is like the charged water in a syphon bottle.

1. These illustrations show why you waste gas pressure without raising ALL the liquid, when you flow a well through casing. On the release of pressure, the expansion of the gas makes the liquid seem to expand as if it were rubber. An instant overflow results. However, the moment the gas expands it becomes so light that it starts bubbling up towards the surface of the liquid, and this escape is so rapid that the liquid quickly loses its gas and its rubber-like expansion subsides. The gas all escapes without having carried out of the bottle more than a third of its liquid contents.

2. These illustrations show the vastly different result, when the principle of flowing through a tubing is employed. On release of pressure the same rubber-like expansion of fluid results, but the escape of liquid is from the bottom of the well, whereas the expanding gas again bubbles UPWARD through the liquid, and UPWARD there is no escape. This gas therefore fills the air chamber left by the escaping liquid, and because it cannot escape its continued expansion continues to force the liquid downward towards the tube opening. All the liquid above the tube opening must be forced out before the gas itself can make good its escape.

The advisability of conserving your well's pressure by flowing through tubing, deserves your careful consideration.

The GUIBERSON Control Head Packer is the only packer which can be easily run in flowing wells against heavy pressures. It is the one practical packer for successfully packing tubing in heavy-pressure wells. Let us tell you about it fully, by sending literature.

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GUIBERSON
BETTER BE SAFE THAN SORRY

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Dec. 9		Dec. 2		Nov. 25	
50-52 450 end point (Naphtha)	.07¾	.08	.07¼	.07½	.07	.07¼
56-58 450 end point	.08¼	.08½	.08¼	.08½	.07½	.07¾
58-60 437 end point (U. S. Motor)	.08¾	.09	.08½	.08¾	.08	.08¼
60-62 400 end point	.10	.10¼	.09½	.09¾	.09¼	.09½
64-66 375 end point	.11½	.11¾	.11	.11¼	.10¼	.10½
68-70 360 end point	.12	.12¼	.12	.12¼	.10¾	.11
OKLAHOMA (Group 3)—						
50-52 450 end point	.07½	.07¾	.07½	.07¾	.07	.07¼
56-58 450 end point	.08¼		.08¼	.08½	.07½	.07¾
58-60 437 end point (U. S. Motor)	.08¾	.09	.08½	.08¾	.07¾	.08
60-62 400 end point	.09¾	.10	.09½	.09¾	.09	.09¼
64-66 375 end point	.11½		.11¼	.11½	.10¼	.10½
68-70 350 end point	.12	.12¼	.12	.12¼	.10¾	.11
KANSAS—						
58-60 437 end point (U. S. Motor)	.08¾	.09	.08½	.09	.08	.08¼
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.07¼	.07½	.07¼	.07½	.07¼	
50-52 440 end point (Naphtha)	.07½	.07¾	.07½	.07¾	.07¾	.07⅝
56-58 450 end point	.08¾	.09	.08¼	.08½	.07¾	
58-60 437 end point (U. S. Motor)	.09¼		.08¾		.08	
60-62 400 end point	.10	.10¼	.09½	.09¾	.09¼	.09½
64-66 390 end point	.11¼	.11½	.10¾	.11¼	.10¼	
64-66 375 end point	.11½	.11¾	.11¼	.11½	.10½	
68-70 360 end point	.12¼	.12½	.12¼	.12½	.10¾	.11
NORTH LOUISIANA—						
56-58 450 end point	.09	.09¼	.08½	.08¾	.08¼	.08½
58-60 437 end point (U. S. Motor)	.09¼	.09½	.08¾	.09	.08½	.08¾
60-62 400 end point	.10¾	.11	.10½	.10¾	.09¾	.10
64-66 390 end point	.11½	.11¾	.11	.11¼	.10¼	.10½
64-66 375 end point	.11¾	.12	.11¼	.11½	.10½	.10¾
ARKANSAS—						
58-60 450 end point	.09	.09¼	.08½	.08¾	.08½	.08¾
58-60 437 end point (U. S. Motor)	.09¼	.09½	.09	.09¼	.08¾	.09
64-66 375 end point	.11¾	.12	.11¼	.11½	.10¾	
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12¼	.12½	.11¼	.11½	.10¼	.10½
PENNSYLVANIA—						
52 Naphtha	.10¾		.10¼		.10¼	
54 Naphtha	.11		.10½		.10½	
56 Gasoline	.11¼		.10½		.10½	
58 Gasoline	.11½		.11¼		.11	
60 Gasoline	.12¾		.11¾		.11¾	
62 Gasoline	.12½		.12¼		.12½	
64 Gasoline	.14½		.14½		.14½	
66 Gasoline	.15¼		.15¼		.15¼	
68-70 Gasoline	.16½		.16¼		.16½	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.09	.09½	.09	.09½	.09	.09½

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Dec. 9		Dec. 2		Nov. 25	
Grade Double A, 80-87.9 375 e.p., rec. 90%	.09	.09¼	.09		.08¾	.09
Grade A, 72-79.9, 375 end point, rec. 90%	.09	.09¼	.09		.08¾	.09
Grade Double B, 84-92, 375 e.p., rec. 85%	.08¾	.09	.08½	.08¾	.08½	.08¾
Grade B, 76-83.9, 375 end point, rec. 85%	.08¾	.09	.08½	.08¾	.08½	.08¾
Grade C, 80-90, 375 end point, rec. 78%	.08½	.08¾	.08½		.08¼	.08½
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.09		.09	.09¼	.08¾	.09
Grade A, 72-79.9, 375 end point, rec. 90%	.09		.09	.09¼	.08¾	.09
Grade Double B, 84-92, 375 e.p., rec. 85%	.08¾		.08¾		.08½	.08¾
Grade B, 76-83.9, 375 end point, rec. 85%	.08¾		.08¾		.08½	.08¾
Grade C, 80-90, 375 end point, rec. 78%	.08½		.08½		.08¼	.08½
NORTH TEXAS—						
Grade Double A, 80-87.9 375 e.p., rec. 90%	.09		.09		.08¾	.09
Grade A, 72-79.9, 375 end point, rec. 90%	.09		.09		.08¾	.09
Grade Double B, 84-92, 375 e.p., rec. 85%	.08¾		.08¾		.08½	.08¾
Grade B, 76-83.9, 375 end point, rec. 85%	.08¾		.08¾		.08½	.08¾
Grade C, 80-90, 375 end point, rec. 78%	.08½		.08½		.08¼	.08½
NORTH LOUISIANA—						
Grade B, 76-83.9, 375 end point, rec. 85%	.08½	.08¾	.08¼	.08½	.07¾	.08
Grade C 76-82, 375 end point, rec. 85%	.08	.08¼	.07¾	.08	.07¼	.07½
CALIFORNIA—						
68-80 absorption 360-390 end point	.11	.11½	.10	.10½	.10	.10½
78-84 compression, 350 end point	.10½		.10		.10	

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Dec. 9		Dec. 2		Nov. 25	
60-62 450 end point	.08½	.08¾	.08½	.08¾	.07¾	.08
64-66 450 end point	.08½	.08¾	.08½	.08¾	.07¾	.08
68-70 437 end point	.08½	.09	.08½	.08¾	.08	.08¼
OKLAHOMA (Group 3)—						
60-62 450 end point	.08½	.08¾	.08¼	.08½	.07⅝	.07¾
64-66 437 end point	.08½	.08¾	.08¼	.08½	.07¾	.08
68-70 430-435 end point	.08¾	.09	.08½	.08¾	.08	.08¼
NORTH TEXAS—						
58-62 440 end point	.08½	.08¾	.08½		.07⅝	.07⅞
58-60 450 end point	.08½	.08¾	.08½		.07⅞	.07⅞
PENNSYLVANIA—						
*60-62	.12½		.12½		.12½	
*64-66	.12½		.12½		.12½	
*66-68	.12½		.12½		.12½	
*68-70	.12½		.12½		.12½	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Dec. 9		Dec. 2		Nov. 25	
41-43 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04⅜	.04½
42-44 water white Kerosene	.04⅝	.04¾	.04½	.04¾	.04½	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05	.05¼	.05	.05¼	.05	.05¼
42-44 water white Kerosene	.05¼	.05½	.05¼	.05½	.05¼	.05½
KANSAS—						
41-43 water white Kerosene	.04⅝	.04⅞	.04⅝	.04⅞	.04⅝	.04⅞
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07½	.07¾	.07½	.07¾	.07½	.07¾
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½
41-43 prime white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
40-42 prime white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04½	.04⅝	.04⅝	.04¾	.04⅝	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04⅜	.04⅝	.04⅜	.04⅝	.04¾	.04½
42-44 water white Kerosene	.04½	.04⅝	.04½	.04¾	.04½	.04¾
41-43 prime white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
ARKANSAS—						
41-43 water white Kerosene	.05¼	.05½	.05⅜	.05½	.05⅜	.05½
42-44 water white Kerosene	.05½	.05⅝	.05⅝	.05¾	.05⅝	.05¾
PENNSYLVANIA—						
43 Kerosene prime white	.07		.07		.07½	
45 Kerosene water white	.07½		.07¼		.07½	
46 Kerosene water white	.08¼		.08		.08	
47 Kerosene water white	.08¼		.08¼		.08¼	
34 Neutral	.09		.09		.09	
34 Sundebloomed Neutral	.07¾		.07¾		.07¾	
36 Miners' Neutral	.06½		.06½		.06½	
300 Mineral Seal	.07½		.07½		.07½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.06	.06½	.06	.06½	.06	.06¼
Engine distillate, 42-44 480 end point	.05½	.05¾	.05½	.05¾	.05½	.05¾

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Dec. 9		Dec. 2		Nov. 25	
24-26 Fuel Oil (sellers' cars Group 3)	1.12	1.17	1.12½	1.17½	1.07½	1.10
22-24 (El Dorado)	1.15	1.20	1.10	1.15	1.05	1.07½
18-20 (Smackover)	1.12	1.17	1.05	1.10	1.00	1.05
32-36 Gas Oil	.03	.03⅛	.02⅞	.03	.02¾	.03
36-38 Distillate	.03¼	.03½	.03¼	.03¾	.03¼	.03⅝
38-40 Straw distillate	.03½	.03¾	.03¾	.04	.03⅝	.04
KANSAS—						
24-26 Fuel Oil	1.20	1.25	1.20	1.25	1.15	1.20
32-36 Gas Oil	.03¼	.03⅜	.03	.03⅛	.03	.03⅛
38-40 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	1.15	1.20	1.10	1.15	1.05	
24-26 Fuel Oil (buyers' cars)	1.15	1.20	1.10	1.15	1.05	
24-26 Fuel Oil (sellers' cars)	1.17½	1.20	1.15		1.05	1.07½
28-30 Fuel Oil (sellers' cars)	1.25	1.30	1.20	1.25	1.15	1.20
32-36 Gas Oil	.03⅛	.03¼	.03	.03⅛	.02⅞	.03
38-40 Straw distillate	.03⅜	.03¾	.03¾	.03¾	.03½	.03⅝
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.15	1.20	1.10	1.15	1.05	1.07½
26-30 Fuel Oil	1.20	1.25	1.15	1.20	1.12½	1.15
32-36 Gas Oil	.03½	.03¼	.02⅞	.03	.02½	.03
36-38 Gas Oil	.03¼	.03½	.03	.03⅛	.03	.03¼
38-40 Straw distillate	.03½	.03¾	.03¼	.03½	.03¼	.03½
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.05	1.10	1.00	1.05
24-26 Fuel Oil	1.15	1.20	1.10	1.15	1.05	1.10
32-36 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
ARKANSAS—						
38-40 Distillate	.03¾	.04	.03½	.03¾	.03½	.03¾
32-36 Gas Oil	.03¼	.03⅜	.03	.03¼	.03	.03¼
22-26 Refinery Fuel Oil	1.10	1.15	1.05	1.10	1.05	1.10
GULF COAST (South Texas)—						
Gas Oil	.04½	.05	.04½	.05	.04½	.05
Fuel Oil	1.60	1.70	1.60	1.70	1.60	1.70
PENNSYLVANIA—						
30-34 Fuel Oil	.06		.05½		.05½	
36-40 Fuel Oil	.06½		.05¾		.05¾	
CALIFORNIA—						
33-36 Distillate	.04	.04½	.04	.04½	.04	.04½
27-33 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
15-20 Fuel Oil (at tide water)	1.40		1.40		1.40	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Dec. 9		Dec. 2		Nov. 25	
70-80 vis., 2½ color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
100 vis., 2 color, 20-25 cold test	.04½	.05	.04½	.05	.04½	.05
100 vis., 3 color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
150 vis., 3 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 4 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
180 vis., 4 color, 23-28 cold test	.08	.08½	.08	.08½	.08	.08½
180 vis., 3 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
200 vis., 3 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 4 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
220 vis., 3 color, 25-30 cold test	.11½	.12	.11½	.12	.11½	.12
220 vis., 4 color, 25-30 cold test	.10¾	.11½	.10¾	.11½	.10¾	.11½
240 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13½
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.07½	.08	.07½	.08	.07½	.08
180 vis., 6 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 5 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
200 vis., 6 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 5 color, 25-30 cold test	.10	.10½	.10	.10½	.10	.10½
220 vis., 6 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
240 vis., 5 color, 25-30 cold test	.12	.12½	.12	.12½	.12	.12½
240 vis., 6 color, 25-30 cold test	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
280 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

180-200 vis., S. R. green, 40-45 cold test	.07½	.07¾	.07½	.07¾	.07	.07¼
190-200 dark green, 40-45 cold test	.06½	.07	.06½	.07	.06	.06½
170-190 dark green, 40-45 cold test	.06	.06½	.06	.06½	.05¾	.06
600, E filtered	.20	.21	.20	.21	.20	.21
190-200 vis. @ 210 "D" Bright Stock	.34		.34		.34	
200-210 vis. @ 210 "E" Bright Stock	.29		.29		.29	
150 vis. @ 210 "D" Bright tock	.30		.30		.30	
130 vis. @ 210 "E" Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.04⅞	.05⅛	.05	.05⅛	.05	.05⅛
PENNSYLVANIA—						
150, 3 color	.22½		.18		.17½	
180, 3 color	.23½		.20½		.19½	
200, 3 color	.25		.22½		.22½	
220, 3 color	.27		.22		.22	
600, steam refined	.22½		.22¼		.21	
625, steam refined	.25		.25		.25	
650, steam refined	.27¼		.27		.27	
600, Pennsylvania flash	.32		.30		.30	
650, Pennsylvania flash	.38		.38		.38	
*550, E filtered	.23½		.19¼		.19¼	
*600, E filtered	.25		.23¼		.22¾	
600, E filtered	.23½		.22½		.22½	
600, D filtered	.32		.30		.30	
550, E f ltered	.20		.20		.20	
550, D filtered	.24		.24		.24	
Pennsylvania Bright Stock	.38½		.37		.36	
*122-124 White Crude Scale Wax	.05⅝		.05⅜		.05⅜	
†122-124 White Crude Scale Wax	.05½		.05½		.05½	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06½	.07	.06½	.07	.06½	.07
No. 2 color, 100 vis., pale oil	.09½	.10½	.09½	.10½	.09½	.10½
No. 2 color, 150 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3 color, 200 vis., pale oil	.13½	.14½	.13½	.14½	.13½	.14½
No. 3 color, 300 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 500 vis., pale oil	.18	.19	.18	.19	.18	.19
No. 3½ color, 750 vis., pale oil	.23½	.24½	.23½	.24½	.23½	.24½
No. 4½ color, 1200 vis., pale oil	.25½	.26½	.25½	.26½	.25½	.26½
No. 4½ color, 2000 vis., pale oil	.29	.30	.30½	.31½	.30½	.31½
No. 2 color, 150 vis., pale filtered	.20½		.20½		.20½	
No. 2 plus color, 200 vis., pale filtered	.22		.22		.22	
No. 2½ minus color, 300 vis., pale filtered	.25½		.25½		.25½	
No. 2½ color, 500 vis., pale filtered	.29½		.29½		.29½	
No. 2½ color, 750 vis., filtered	.39½		.39½		.39½	
No. 5 to 6 color, 200 vis., red oil	.12	.13	.12	.13	.12	.13
No. 5 to 6 color, 300 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 5 to 6 color, 500 vis., red oil	.16	.17	.16	.17	.16	.17
No. 5 to 6 color, 750 vis., red oil	.20½	.21½	.20½	.21½	.20½	.21½
CALIFORNIA—						
200 vis., 2½-3 color	.15	.16	.15	.16	.15	.16
300 vis., 2 -4 color	.15	.17	.15	.17	.15	.17
350 vis., 3½-4 color	.17½	.18½	.17½	.18½	.17½	.18½
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.13	.14
300 vis., 5 -6 color	.14	.16	.14	.16	.14	.16
400 vis., 5 -6 color	.16	.17	.16	.17	.16	.17
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis., 6½ plus color	.18	.19	.18	.19	.18	.19

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Dec. 9	Dec. 2	Nov. 25
U. S. Motor Gasoline, 58-60 437	.13	.12½	.12
*Bunker Oil, 14-16 Be.	1.80	1.80	1.80
Diesel O l, 28-30 Be.	2.00	2.00	2.00
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.05	.05	.05
41-43 Kerosene prime white	.08½	.08½	.08⅝

NEW YORK EXPORT PRICES

Motor Gasoline:	Dec. 9	Dec. 2	Nov. 25
58-60 Be. gravity, in cases	.26.15	.26.40	.26.40
U. S. Navy, in bulk	.12½	.12¼	.12¼
Naphtha:			
60° F., 59-61 Be. gravity, in bulk	.14¾	.14	.13¼
60° F., 63-66 Be. gravity, in bulk	.16	.15½	.14½
60° F., 66 68 Be. gravity, in bulk	.17½	.17	.16
Kerosene:			
Standard white, 40-42 Be. grav., in bulk	.06½	.06½	.06½
Standard white, 40-42 Be. grav., in barrels	.13½	.13½	.13½
Standard white, 40-42 Be. grav., in cases	.16.9	.16.9	.16.9
Water white, 42-44 Be. grav., in bulk	.07½	.07½	.07½
Water white, 42-44 Be. grav., in barrels	.14½	.14½	.14½
Water white, 42-44 Be. grav., in cases	.17.9	.17.9	.17.9
Lubricating Oils:			
Cylinder Stock, extra light filtered, 600, in barrels	.44½	.44½	.44½
Cylinder Stock light filtered, 600, in barrels	.38½	.38½	.38½
No. 5 Bright Stock, .897 spec. grav.	.48½	.48½	.48½
No. 1 white neutral, .878 spec. grav.	.43	.43	.43
No. 1 Summer Black, .895 spec. grav.	.12	.12	.12
Special "A" red oil, .897 spec. grav., 170 vis.	.21	.21	.21
No. 2 red oil, .903 spec. grav., 212 vis.	.22	.22	.22
No. 1 red oil, .905 spec. grav. 265 vis.,	.23	.23	.23
Polar red oil, .906 spec. grav., 295 vis.	.25	.25	.25
Pale oil, "25", .899 spec. grav.	.19½	.19½	.19½
Pale oil, "28", .892 spec. grav.	.16	.16	.16
Parsffin Wax:			
120-122 a.m.p., per lb.	.06	.06	.06
125-127 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07½	.07½	.07¼

LOS ANGELES EXPORT PRICES

	Dec. 9		Dec. 2		Nov. 25	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor gasoline, 54-56, 437 end point	.08½	.09	.08½	.09	.08½	.09

CRUDE OIL PRICES

October 27.—Standard Oil Co. of Louisiana advanced Cotton Valley crude 15 cents.

November 6.—Major purchasing companies advanced Grade "A" Gulf Coast crude 25 cents and Grade "B" 20 cents. Indian Refining Co. advanced Western Kentucky crudes 10 cents.

November 12.—Standard Oil Co. of Louisiana advanced Bellevue crude 25 cents.

Arkansas and North Louisiana

Caddo, 38° and above	$1.35
35° to 37.9°	1.25
32° to 34.9°	1.15
Below 32°	1.00
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.00
Below 33°	.90
Bull Bayou, 38° and above	1.15
35° to 37.9°	1.00
32° to 34.9°	.85
Cotton Valley	.95
De Soto	1.20
Crichton	1.00
Bellevue	1.35
Smackover, 25° and above	.95
Below 25°	.85
*Stephens, Ark.:	
26° and above	.90
Below 26°	.70

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .95
Salt Creek	.85
Big Muddy	.75
Mule Creek	.60
Grass Creek (light)	1.20
Elk Basin	1.20
Lance Creek	1.15
Osage	1.15
Cat Creek (Mont.)	1.20
Sunburst (Mont.)	.90
Lost Soldier	.78
Greybull and Torchlight	1.15
Hamilton Dome	.80

Lander based on contracts covering entire production of fields.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	$ .75
30° to 32.9°	.90
33° to 35.9°	1.10
36° and above	1.25
Magnolia Petroleum Co.:	
*33° and above	1.25
Corsicana Light	1.25
Corsicana Heavy	.90
Mexia	1.25
Powell	1.25
Thrall	1.00

*Below 33° gravity, same as Prairie.

Prairie Oil & Gas Co. buying crude in new Wortham Pool at gravity basis.

Humble Oil & Refining Co.

Ranger:	
Below 30°	$ .90
30° to 32.9°	1.10
33° to 35.9°	1.25
36° and above	1.35
Mexia	1.25
Powell	1.25
Currie	1.25
Richland	1.25

*Wichita-Archer Counties and Moran, same as Prairie.

Gulf Coast

†Grade "A"	$1.50
†Grade "B"	1.25
Luling	.90
Laredo (Magnolia Petroleum Co.)	.75
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.53
*High Island	.85

*Posted by Sun Co.

†Following are the specifications for Gulf Coast crudes as posted by Humble Oil & Refining Co.:

"Grade "A"—Viscosity—Not less than 100 seconds at 100° F. Saybolt sulphur—Not over .4% Baume gravity. Not over 25 at 60° F.

Cold test of distillates having viscosity of 1,000 seconds at 100° F., A. S. T. M. method.

Grade "B"—Embraces all coastal crude which does not meet the test for "A" Grade crude.

*Somerset	
26° and above	.95
Below 26°	.85

*Posted by Grayburg Oil Co.

California

14° to 19.9°	$1.00
20° to 20.9°	1.01
21° to 21.9°	1.02
22° to 22.9°	1.03
23° to 23.9°	1.05
24° to 24.9°	1.07
25° to 25.9°	1.10
26° to 26.9°	1.13
27° to 27.9°	1.16
28° to 28.9°	1.19
29° to 29.9°	1.22
30° to 30.9°	1.25
31° to 31.9°	1.28
32° to 32.9°	1.31
33° to 33.9°	1.34
34° to 34.9°	1.37
35° to 35.9°	1.40
36° to 36.9°	1.46
37° to 37.9°	1.52
38° to 38.9°	1.58
39° to 39.9°	1.64
40° to 40.9°	1.70
41° to 41.9°	1.76
42° and above	1.82

Eastern States

Penna Grade Oil in New York Transit Lines	$2.85
Bradford District Oil in National Transit Lines	2.85
Penna Grade Oil in National Transit Lines	2.75
Penna Grade Oil in Southwest Pa. Pipe Line Lines	2.75
Penna Grade Oil in Eureka Pipe Line Lines	2.75
Penna Grade Oil in Buckeye Pipe Line Lines	2.75
Cabell Grade Oil in Eureka Pipe Line Lines	1.45
Corning Grade Oil in Buckeye Pipe Line Lines	1.50
Somerset Medium Oil in Cumberland Pipe Line Lines	1.55
Somerscet Light Oil in Cumberland Pipe Line Lines	1.70
Ragland Grade Oil in Cumberland Pipe Line Lines	.90
Lima	1.58
Wooster	1.40
Illinois	1.37
Indiana	1.38
Princeton	1.37
Plymouth	.75
Waterloo	.75
†Oil Springs, Canada	2.30
†Petrolia, Canada	2.23
*Western Kentucky, 36° and above	1.30
*Western Kentucky, 33° to 35.9°	1.20
*Western Kentucky, 32.9° and below	1.10
Cumberland, Barren and Monroe Counties, (Kentucky) (Paragon Development Co.)	1.70

†Plus Government bounty of 26½c.

*Prices for Warren, Allen, Hancock, and Ohio Counties by Indian Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co., same as Indian Refining Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.15
†Panuco (f.o.b. Mexican ports)	.96
Tuxpam (New York)	1.72
Panuco (New York)	1.38

*Plus 32.33c. †Plus 17.64c tax. Prices based on contracts.

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A BLESSING IN DISGUISE

The discovery of the new Wortham Pool in East Central Texas, with its possibility of 75,000 to perhaps 200,000 barrels a day, is a sufficient answer to those who have deprecated warnings against a repetition of the premature activity of the past two winters.

Everyone can understand and sympathize with the impatience to get going once the turning point in production had been sighted. Naturally there has been a hope for a turn in the market that would encourage operations. The increasing demand for crude by refiners preparing for next season has been cited as argument for an advance in prices. The upturn in the refined market has accentuated this.

Nevertheless, despite all these encouraging symptoms, the dead weight of the accumulated surplus of years of overproduction, both crude and refined, overhangs the situation and cannot safely be ignored, as the experience of the past two winters has proved.

It may be true that production and consumption are not far apart, with the belief general that production would continue to decline, not perhaps from week to week, but as the months go by.

That decline, however, is subject to upsetting developments like this discovery at Wortham, like that at Powell a year ago, or like the unexpected pools found in Oklahoma last summer.

The Wortham Pool has been estimated at from 75,000 to 200,000 barrels, depending on whether the field proves narrow or wide. The oil is of high gravity and easily accessible. Its effect will be immediate.

It will be produced quickly and even though it is soon exhausted it must mean that withdrawals from stocks will be so much longer postponed.

That was the case with Powell, coming when there was general relief over the dwindling of the California flood. It postponed resumption for months and added to the accumulations that retarded improvement, largely because sufficient thought was not given to the possibilities of the new production discovered during the past twelve months.

The result was that 1924 almost duplicated the depression of 1923. The industry does not want and cannot stand another year like those. It can avoid it if it avoids the errors of judgment which brought about those disasters.

Before the development at Wortham it looked as though the industry was being almost irresistibly headed toward a repetition of those very errors. Impatience was becoming imperative. The usual premiums were being reported. The stage was apparently being all set for another runaway.

Production was declining or, at least, increasing comparatively little. The refined markets were strengthening. The Mid-Continent was being reported cleared of surplus gasoline. Advances in prices of petroleum products were reported practically all over the country.

Admonitions to remember the mistakes of the fall of 1923 and 1924 were almost resented. They certainly were not wanted or heeded.

Then came Wortham. At the same time production was showing a temporary increase. The hoped for decline was being delayed and the new pool threatens to postpone it still further, possibly until spring.

Exactly what the industry had been warned against had happened. Once more the unguessable possibilities of production had been demonstrated.

Only fools or strangers, it has been said, attempt to predict the weather in Texas. The same applies to oil production.

But, as has been suggested, Wortham may prove a blessing in disguise. It probably will put an end, for the time being, to these expectations of an immediate advance in crude prices.

Disappointing though it may be, for the time at least, the industry as a whole will probably be the better for it since it will prove a wholesome brake upon a situation that threatened again to become perilous.

The delay in resuming full speed ahead as early as hoped will in the end be to our advantage if thereby we can avoid overrunning the mark as we did in the past two years.

The question is simply this: Do we prefer three months of feverish activity in the winter, almost certain, as experience has shown, to be followed by depression for the rest of the year, or do we prefer making haste slowly for a month or two and thereby assuring so far as possible a prolonged period of general prosperity?

That was the situation before Wortham was discovered but being unpalatable it was being ignored. The new East Central Texas Pool is, however, a fact that cannot be evaded or denied. It presents in concrete form what was disregarded as a theory.

Notwithstanding, Wortham is only temporary. The general trend of production and consumption will not be diverted by its production alone, however important its immediate effect may be. It merely emphasizes the warning that was in danger of being disregarded to our renewed disaster.

If the industry can keep its head during the next few months, and Wortham is going to be valuable in assisting it in doing so, we should emerge in the spring with every hope for a prosperous year.

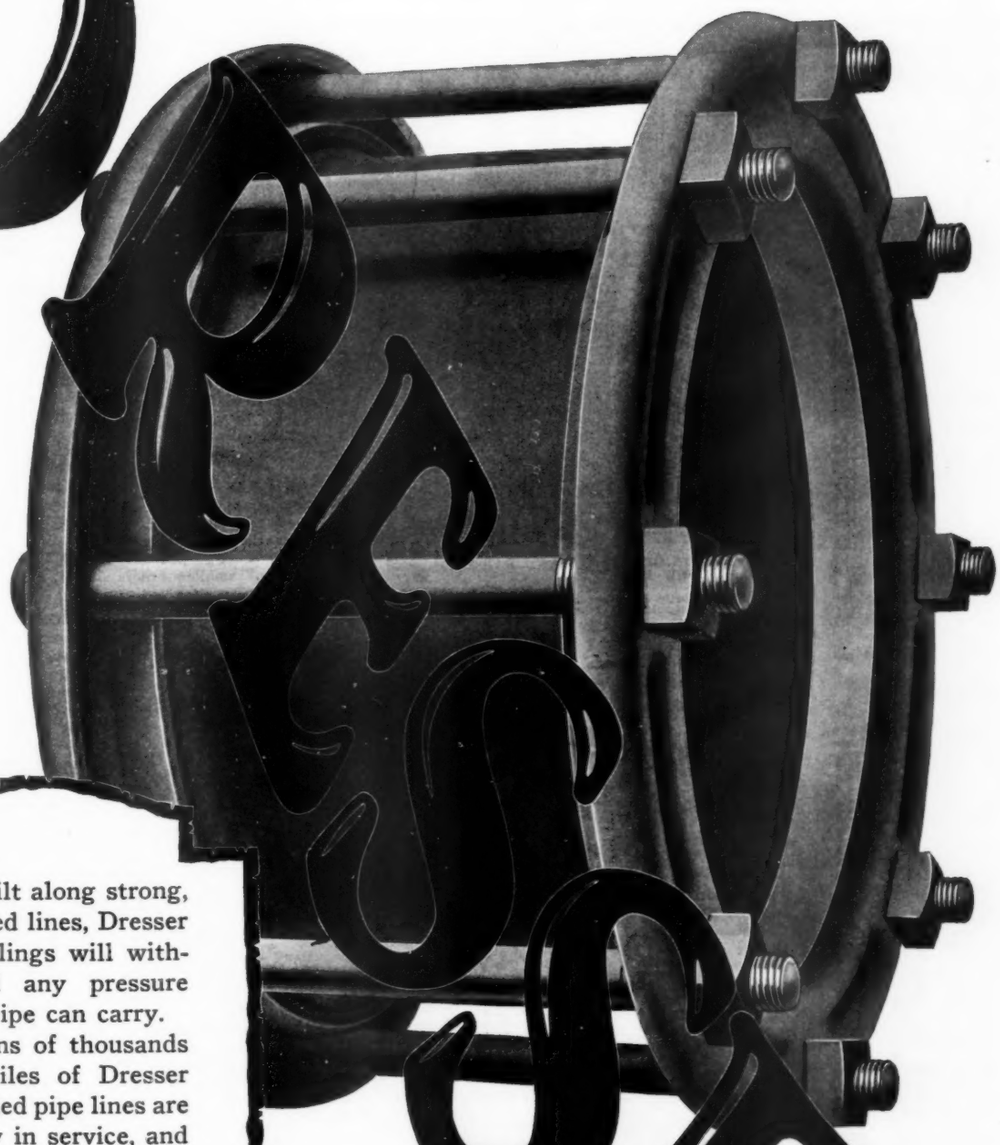
When the decline of production permits advancing of prices it should be without fear of a relapse so that men can plan ahead. A premature step provoking unrestrained operations might at this time uncover other Worthams and so pile up production as to repeat the unhappy record of the past spring and summer.

Good sense will commend a policy of caution to the industry with the warning that Wortham offers. The immediate disappointment will be much more than compensated for in the ultimate reward if that program is followed.

The industry has banked so much upon 1925 being the turning point in oil and everything else so clearly indicates a year of unprecedented prosperity, both at home and abroad, it would be a culminating misfortune if through untimely haste, in the face of the clearest warnings and this demonstration of lurking possibilities, prudence should be cast to the winds and we should be again disappointed.

Happily the issue is within our own decision. Nothing can cheat us of our hopes but our own acts. Let us deserve the prosperity in the coming year that everybody else confidently expects.

DRESSER



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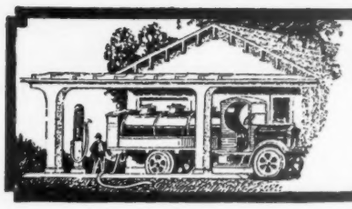


TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Dec. 9

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Chicago District—				
†100 gals. or more	13.0	...	16.0	11.0

Tank wagon prices on April 10, 1922; g. up 1¼c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 3c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c.

Decatur, Ill.	13.2	...	15.2	11.5
East St. Louis	12.1	...	14.35	10.6
Joliet	13.4	...	15.4	11.7
Peoria	13.0	...	15.0	11.5
Quincy	13.2	...	15.2	11.3
Davenport, Ia.	13.5	...	16.5	11.9
Des Moines	13.5	...	15.5	11.9
Keokuk	13.5	...	16.5	11.9
Sioux City	13.0	...	16.0	11.5
Duluth, Minn.	14.5	...	16.5	12.6
Minneapolis	14.2	...	16.2	12.6
La Crosse, Wis.	14.2	...	16.2	12.4
Milwaukee	13.1	...	15.1	11.3
Madison	13.3	...	15.3	11.5
Detroit, Mich.	13.8	...	15.8	12.2
Grand Rapids	13.7	...	15.7	12.1
Saginaw	13.9	...	15.9	12.3
Evansville, Ind.	15.0	2.0	17.0	11.5
Fort Wayne	15.4	2.0	17.4	11.9
Indianapolis	15.2	2.0	17.2	11.7
South Bend	15.4	2.0	17.4	11.9
Fargo, N. D.	15.9	1.0	17.9	14.6
Huron, S. D.	17.0	2.0	19.0	13.1
Sioux Falls	15.0	2.0	17.0	12.6
*Kansas City, Mo.	13.9	1.0	15.9	10.3
Springfield	13.8	...	15.8	11.2
*St. Louis	12.6	0.5	14.9	11.0
*St. Joseph	13.0	0.5	15.0	10.9
Wichita, Kans.	12.8	...	14.8	9.8
Bartlesville, Okla.	14.4	...	16.4	9.9

*City tax.
†Tank wagon price on less than 100 gallons, 14c.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Newark, N. J.	13.5	...	....	13.0
Atlantic City	13.5	...	....	13.0
Annapolis, Md.	15.0	2.0	17.0	12.0
Baltimore	15.0	2.0	17.0	11.0
Cumberland	15.0	2.0	17.0	12.5
Washington, D. C.	16.0	2.0	18.0	12.5
Norfolk, Va.	17.0	3.0	19.0	13.5
Petersburg	17.0	3.0	19.0	13.5
Danville	17.0	3.0	19.0	13.0
Richmond	17.0	3.0	19.0	13.5
Roanoke	17.0	3.0	19.0	13.5
Keyser, W. Va.	15.0	2.0	....	13.5
Charleston	16.0	2.0	....	12.5
Parkersburg	16.0	2.0	....	13.5
Wheeling	16.0	2.0	....	13.5
Charlotte, N. C.	15.0	3.0	....	13.5
Hickory	15.0	3.0	....	13.5
Mt. Airy	15.0	3.0	....	13.5
Salisbury	15.0	3.0	....	13.5
Charleston, S. C.	15.5	3.0	....	14.0
Columbia	15.5	3.0	....	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Atlanta, Ga.	17.0	3.0	20.0	11.0
Augusta	17.0	3.0	20.0	13.5
Macon	17.0	3.0	20.0	14.5
Savannah	14.0	3.0	17.0	13.0
Birmingham, Ala.	15.0	2.0	18.0	14.5
Mobile	14.0	2.0	17.0	12.5
*Montgomery	15.0	3.0	19.0	15.5
Clarksdale, Miss	15.0	3.0	18.0	12.0
Jackson	15.0	3.0	18.0	10.0
Natchez	14.5	3.0	17.5	11.5
Vicksburg	14.5	3.0	17.5	11.5
Jacksonville, Fla	15.0	3.0	18.0	13.0
Miami	17.0	3.0	20.0	14.5
Pensacola	15.0	3.0	18.0	13.5
Tampa	15.0	3.0	18.0	13.0
Lexington, Ky.	16.0	3.0	19.0	14.0
Covington	15.0	3.0	18.0	14.0
Louisville	15.0	3.0	17.0	12.0

*In addition to State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
New Orleans, La.	13.5	2.0	15.5	9.0
Alexandria	14.5	2.0	16.5	13.0
Baton Rouge	13.0	2.0	15.0	11.5
Lake Charles	14.5	2.0	16.5	13.0
Shreveport	14.5	2.0	16.5	13.0
Memphis, Tenn.	14.0	2.0	16.0	14.0
Chattanooga	15.0	2.0	17.0	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	13.5
Bristol	17.0	2.0	19.0	13.5
Little Rock, Ark.	17.0	4.0	19.0	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
San Francisco	15.0	2.0	18.0	15.5
Los Angeles	13.5	2.0	16.5	15.5
Fresno	15.5	2.0	18.5	17.5
Reno, Nev.	18.5	2.0	21.5	19.0
Portland, Ore.	16.0	3.0	19.0	16.5
Seattle, Wash.	15.0	2.0	18.0	16.5
Tacoma	15.0	3.0	18.0	16.5
Spokane	19.0	2.0	22.0	20.5
Phoenix, Ariz.	21.0	3.0	24.0	21.5

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Basin, Wyo.	17.0	1.0	....	14.0
Casper	15.0	1.0	17.0	12.0
Cheyenne	16.5	1.0	18.5	13.5
Cody	18.0	1.0	....	15.0
Lander	17.0	1.0	....	14.0
Albuquerque, N. M.	19.0	1.0	21.0	15.0
Salt Lake, Utah	20.0	2.0	22.0	17.0
Ogden	20.0	2.5	22.0	17.0
Cheyenne, Colo.	16.5	1.0	18.5	13.5
Glenwood Spgs.	20.0	2.0	....	17.5
Pueblo	18.0	2.0	18.0	13.5
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	15.5
Missoula	21.0	2.0	23.0	16.0
Boise, Idaho	21.5	2.0	23.5	19.0
Idaho Falls	21.0	2.0	23.0	18.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
*Pittsburgh, Pa.	15.0	...	20.0	14.0
*Philadelphia	15.0	...	20.0	14.0
*Scranton	15.0	...	20.0	14.0
*Allentown	15.0	...	20.0	14.0
*Altoona	15.0	...	20.0	14.0
*Erie	15.0	...	20.0	14.0
Dover, Del.	17.0	2.0	20.0	14.0
Wilmington	17.0	2.0	20.0	14.0
Springfield, Mass.	15.0	...	18.0	13.0
Worcester, Mass	15.0	...	18.0	13.0
Boston	15.0	...	18.0	11.0
Providence, R. I.	15.0	...	18.0	13.0
Hartford, Conn.	16.0	1.0	19.0	12.0
New Haven, Conn.	16.0	1.0	19.0	13.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Albany, N. Y.	15.0	...	....	13.0
*New York	15.0	...	....	13.0
Buffalo	15.0	...	....	12.0
Rochester	15.0	...	....	13.0
Syracuse	15.0	...	....	12.0
Boston, Mass.	15.0	...	....	13.0
Providence, R. I.	15.0	...	....	13.0
Augusta, Me.	16.0	1.0	....	13.0
Manchester, N. H.	17.0	2.0	....	13.0
Burlington, Vt.	16.0	1.0	....	13.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station prices in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Omaha	11.0	...	13.0	11.5
Crawford	14.0	...	....	12.25
McCook	14.75	...	16.75	13.0
Norfolk	13.75	...	15.75	12.6
North Platte	14.75	...	16.75	12.75
Scotts Bluff	14.25	...	16.25	12.25

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
Dallas, Tex.	10.0	1.0	12.0	10.0
Fort Worth	10.0	1.0	14.0	10.0
Houston	10.0	1.0	14.0	10.0
San Antonio	10.0	1.0	12.0	10.0
El Paso	10.0	1.0	14.0	11.0
Muskogee, Okla.	14.0	2.5	19.0	11.0
Oklahoma City	14.0	2.5	17.0	11.0
Tulsa	12.0	2.5	15.0	10.0
Ft. Smith, Ark.	16.0	4.0	18.0	12.0
Little Rock	17.0	4.0	19.0	11.0
*Texarkana	16.0	4.0	19.0	10.0

*Does not include 1c additional tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Incids tax	Gasoline Service of station	Kero. Tank wagon
All Ohio points	15.0	...	17.0	14.0

TANK WAGON CHANGES

December 1.—Standard Oil Co. of Kentucky reduced kerosene tank wagon 2 cents at Atlanta and advanced ½-cent at Mobile.

December 3.—Magnolia Petroleum Co. reduced gasoline tank wagon and service station prices 2 cents in Tulsa.

LESS ACTIVITY IN GASOLINE MARKET

(Continued from Page 22)

manufacturers have little material to offer and have not changed their quotations on any grade. These large manufacturers are said to be moving their current output with practically no material in storage. Blend prices are unchanged.

Neutrals and Wax

There is no change in the neutral market. Both export and domestic buyers were in the market for cylinder stocks and at least one large purchase was made with several smaller orders placed. The strong demand for bright stocks continues. Wax prices are slightly lower with orders placed this week at 4¾ and 5 cents.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended November 29 totaled 551,000 bbls., a daily average of 78,714 bbls., against 691,000 bbls., a daily average of 98,714 bbls. for the week ended November 22.

At Atlantic Coast Ports—	
Baltimore	147,000
New York	266,000
Philadelphia	58,000
Others	80,000
Total	551,000
Daily average	78,714
Total Atlantic and Gulf Coast ports	551,000
Daily average	78,714

Imports of crude and refined oils at the principal ports for the week ended November 29 totaled 1,937,000 bbls., a daily average of 276,714 bbls., compared with 2,011,000 bbls., a daily average of 287,286 bbls. for the week ended November 22.

Atlantic Coast Ports—	
Baltimore	123,000
New York	577,000
Philadelphia	189,000
Others	262,000
At Atlantic Coast Ports—	
Baltimore	123,000
New York	577,000
Philadelphia	189,000
Others	262,000
Total	1,151,000
Daily average	164,438
At Gulf Coast Ports—	
Galveston district	526,000
New Orleans and Baton Rouge	190,000
Port Arthur and Sabine district	50,000
Tampa	20,000
Total	786,000
Daily average	112,286
At All U. S. Ports—	
Total	1,937,000
Daily average	276,714

RECLAIMED HEAT SAVES FUEL

At the plant of the American Chocolate Almond Co., which is powered with a 65 horse power oil engine, the jacket water from the engine passes through an exhaust heater on its way to the food pump of the heating boiler. The heat thus reclaimed is equivalent to 20 tons of coal per month costing $150. It costs only $85 per month to run the oil engine.

Equipment Men Seek Entrance to A. P. I. As a Supply Group

FORT WORTH, Tex., Dec. 9.—A largely attended meeting of representatives of the leading manufacturers and distributors of oil country materials was held in the Hotel Texas Monday evening to take action on the question of forming a permanent organization.

John Geismar, of the National Supply Co., presided.

W. K. Hughes of the Continental Supply Co., set forth the need of an organization where the members could get together and discuss trade questions and take action on matters affecting the supply trade as a whole.

D. J. Brown, president of the Oil Well Supply Co., proposed that instead of effecting a separate organization the supply branch of the oil industry seek entrance into the American Petroleum Institute as a supply group and offered a resolution that the chairman appoint a committee to confer with the officers of the American Petroleum Institute with that end in view.

The chairman appointed D. J. Brown, Oil Well Supply Co.; W. K. Hughes, Continental Supply Co.; R. C. Kuldell, Hughes Tool Co.; R. S. Haseltine, Guiberson Corp.; John Geismar, National Supply Co.; E. W. Goeser, Emsco Tool Co., and W. A. Gray, Jarecki Manufacturing Co.

The committee was instructed to report at a meeting of supply men to be held before the close of the American Petroleum Institute meeting this week.

NATURAL GASOLINE IS STRONG IN CALIFORNIA

LOS ANGELES, Cal., Dec. 6.—The outstanding feature of the California market is the remarkable strength of absorption natural gasoline. The available uncontracted supply is very small and the price goes up. Two weeks ago natural gasoline of about 375 end point, 25 plus color and a 90 per cent recovery could be contracted at 5½ to 6½ cents under the retail price of motor gasoline in the Los Angeles district (tax excluded.) This retail price has stood for several weeks at 14½ cents per gallon. About seven days ago two contracts were closed for the output of several natural gasoline plants at "5 cents under." Three days ago a plant was contracted at "4 cents under and another deal was closed at "3 cents under." The most active buying of natural gasoline is being done by the Shell company of California and the Standard Oil Co. (California). General Petroleum, which has been active in this market for some months, has apparently decided not to meet the prevailing high prices on natural gasoline. It is generally understood the Shell Co. of California is buying this material for blending gasoline for European consumption.

Engine distillate is moving very slowly with practically no demand. Kerosene is also sluggish. Very little cased kerosene is leaving the Pacific Coast.

Fuel oil at tidewater maintains the price of $1.40 per barrel very satisfactorily. Among the small refiners who have no access to the tidewater market a price of $1 to $1.10 prevails.

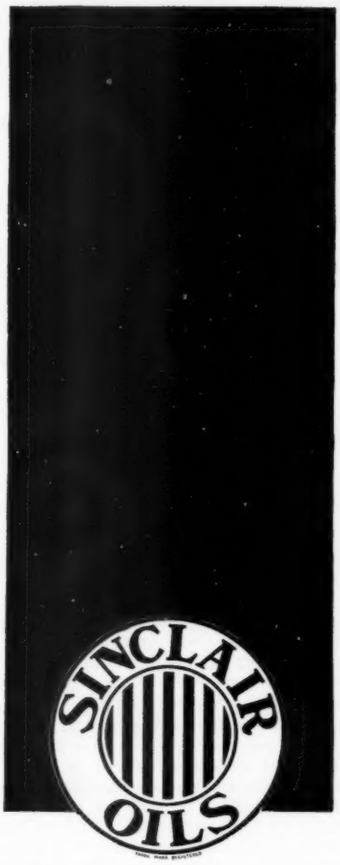
The lubricating oil market is sluggish, reflecting the decreased automotive mileage of winter. Prices are quirte firm at levels established a month to six weeks ago.

DEEPEST GAS WELL ANALYSIS

PITTSBURGH, Pa., Dec. 6.—Analysis of the gas from the deep well of the Peoples Gas Co. on Chestnut Ridge, Westmoreland County, the deepest gas producer in the world, is as follows:

	Pct.
Hydrogen sulphide	0.2
Carbon dioxide	0.1
Mathene	98.8
Ethane	0.3
Estimated B. T. U.	1109.
Total	100.00

SINCLAIR OILS



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Use of Tractors on Farms Increasing

Gasoline and Kerosene Used for Fuel. Growing Field Provided for Use of Petroleum Products

By L. M. Fanning

There are now slightly more than 400,000 gas tractors in use on farms in the United States, according to the Bureau of Public Roads of the United States Department of Agriculture, which also estimates that in addition there are probably 50,000 or 60,000 tractors used in road work, lumber camps and in cities for various industrial purposes.

The bureau advises that its best information in regard to fuel used by tractors indcates that the average tractor uses about 600 gallons per year and that of the total fuel used about 150 is gasoline and 450 kerosene or distillate. This does not necessarily mean, however, that 25 per cent of the tractors use gasoline and 75 per cent heavy fuel, as some tractor owners mix the two and many others use heavy fuel in warm weather and gasoline when it is cold. The relative price of the fuels also has quite an influence on the choice. Close to the oil fields or refineries where kerosene or distillate is relatively cheap, a greater proportion is used than in areas where there not such a difference, as for example in the Eastern States.

There has been no complete count of the number of tractors on farms since 1920. That census showed a total of 246,138, with a big preponderance, logically, on the big farms of the Middle West. Ohio had 10,497; Indiana, 9,230; Illinois, 23,102; Michigan, 5,884; Wisconsin, 9,407; Minnesota, 15,503; Iowa, 20,270; Missouri, 7,889; North Dakota, 13,006; Nebraska, 12,939; Kansas, 11,106. These States totaled 138,823 tractors, out of the total for the United States of 246,138, or over 56 per cent.

Field for Petroleum

The expansion of tractor utilization presents a growing field for the sale of petroleum products. As shown by the above figures, tractors on farms have almost doubled in the last four years. The indicated present consumption of fuel by all tractors now amounts to something like 276,000,000 gallons a year of gasoline or kerosene or distillate.

That a large increase in the number of tractors in use will be shown each year is indicated by figures of the Department of Commerce collected at the annual canvass of manufacturers of farm equipment. These show that the number of farm tractors manufactured in the United States increased from 73,198 in 1921 to 99,692 in 1922 and 134,610 in 1923. The big year in tractor manufacture was in 1920 when 203,207 were made. Detailed figures of manufacture by the Bureau of Public Roads for 1922, giving a comparison with 1921 and 1920 follow:

	Farm Tractors Manufactured							
	Manufactured			Sold in United States			Sold for Export	
Year	Number of establishments	Number	Value (expressed in thousands.)	Number	Value (expressed in thousands.)		Number	Value (expressed in thousands.)
1922	81	99,692	52,178	101,192	52,440		10,232	6,458
1921	93	73,198	50,295	*	*		*	*
1920	90	203,207	193,563	162,988	161,896		29,143	30,350

*No sales data were collected in 1921.

Figures on manufacture, sales and stocks of tractors for previous years, as issued by the Bureau of Public Roads, follow:

	1916	1917	1918	1919
Number manufactured ...	29,670	63,742	132,697	164,590
Number sold in the U. S..	27,819	49,504	96,470	136,162
Number sold for export...	.....	14,854	36,351	19,693
Number on hand Dec. 31..	.....	15,525	15,401	27,740

Consumption of Fuel

Some interesting figures on tractor consumption of fuel and lubricating oil are given by the Bureau of Public Roads as regards tractors on Corn Belt farms. The amount of fuel and oil required per day by tractors is governed ordinarily by the size of the machine. For the heavy operations, such as plowing and disking, two-plow outfits require an average of about 18 gallons of fuel per day and 4 quarts of oil, and the three-plow outfits about 23 gallons of fuel and 5 quarts of oil. By careful operation the amounts used on work where the tractor is not loaded to capacity can be reduced somewhat.

While the three-plow outfit with its more powerful motor requires a correspondingly greater amount of fuel and oil than that required by a two-plow outfit while performing the same kind of work under identical conditions, the larger amount of fuel and oil is offset in the greater amount of work done per day. When the cost of fuel and oil is figured on the basis of acres covered or other work done per day there is practically no difference in the fuel and oil requirements for the different sizes.

At the time the report was made the price of kerosene in the Corn Belt was about half that of gasoline. It was found that because of the lower price of kerosene, between 75 per cent and 80 per cent of the tractors in the Corn Belt were operated on that fuel. With the improvements that have been made in kerosene carburetors, the report states, very little trouble is experienced in burning this fuel. The amount of work accomplished per gallon when using either gasoline or kerosene is practically the same.

Use Kerosene and Gasoline

Where kerosene is used the motor is started on gasoline and run until it is heated up sufficiently so that a switch can be made to the kerosene without any change in the steady flow of power. In shutting off the motor for any length of time it is necessary to use gasoline, so that this fuel will be in the carburetor when the motor is started again.

Some operators, it is stated, prefer to use gasoline, as they figure their machines give better service and the difference is enough to pay the added cost of using this fuel. The bureau points out as regards lubricating oil use in tractors that a good quality oil is more satisfactory and will insure a longer life of the working parts.

It is stated that the amounts of fuel and oil which will be used per year by any tractor will depend on the amount of work done as well as on the size of the machine. A machine working 30 days per year and using 20 gallons of fuel per day will require 600 gallons for a year's work. The amount of lubricating oil required per year for a two-plow or three-plow tractor working 30 days per year will be 30 to 40 gallons. These figures are considered probably average.

A recent issue of the Imperial Oil Review gave the following account of tractor development in Canada; estimating that there are now approximately 39,000 tractors on farms in western Canada:

Use in Canada

"From a yoke of oxen and stick plow to the ten-plow tractor is a long cry. With the former equipment a man could plow no more than half an acre per day, while the 10-plow tractor is rated as good for 30 acres, allowing the modern farmer to do 60 times as much work in one day as was done not so very long ago by the man using the primitive implement.

"Human labor is the principal factor that has increased grain production costs during the past few years. The tractor appears to be the solution for this problem, for in spite of all the conferences in the world and all the talk that goes on as to how wages are to be reduced, it is quite probable that wages will not go very much below present levels.

"They are too high, it is true, but how to get them down is a problem for which nobody appears to have a solution, unless it is to be found in the direction of utilizing labor more economically; in other words in the use of labor-saving equipment to make possible greater production for each labor unit.

"The tractor business has now settled down to a steady gait. The experience of the past 15 years has added considerably to the information on types of tractor best adapted for use in this country and with their manufacturing in strong hands, the tractor is steadily improving in efficiency.

Belt Power Use Increasing

"Additional to the prime function of the tractor is motive power for plow and other farm implements, its utilization for belt power is increasing. On farms where there are silos, where feed must be ground for stock or where a thresher is to be operated, the importance of the tractor should not be underestimated.

"Permitting due depreciation there were approximately 30,000 tractors on western farms available for use at the beginning of the 1924 season. The outlook is for increased sales in 1924. Several tractor companies report sales to date as being considerably ahead of 1923.

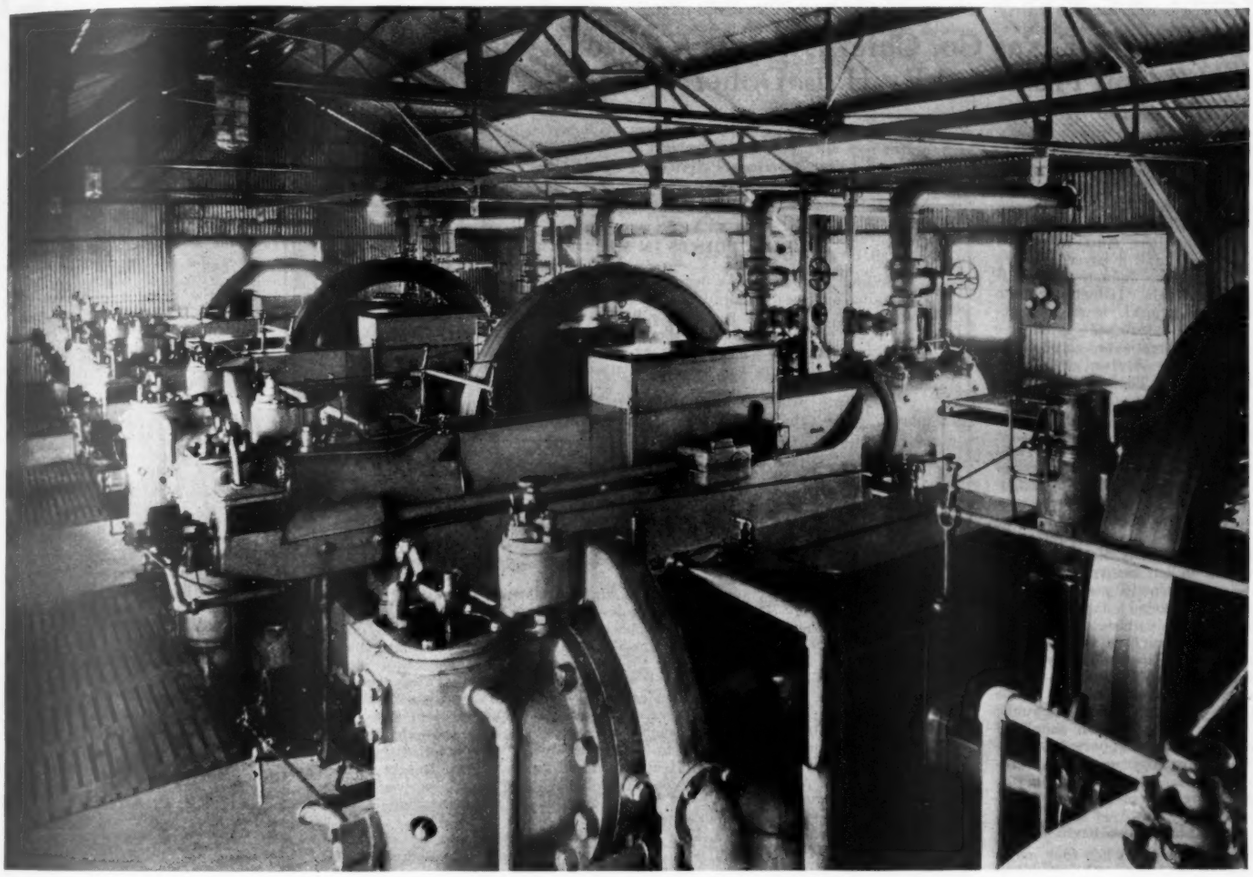
"The big steam, kerosene and gasoline burning tractors are not so popular as in the past. Since the advent of the small kerosene tractors many farmers have found that they cannot do without them, and they have proven economically successful. The large-scale farmers in the district now depend almost entirely upon motor power from the time the seed is put in the ground until the grain is hauled to the elevators.

"Saskatchewan seasons, while productive and as a rule of wonderful growth, are short of duration like the salmon industry in British Columbia, and the farmer to make a success must work from early morn until late night during the six months of plowing, seeding and cutting of the grain. Often only a few days lost may mean the difference between harvesting a healthy crop and having a complete failure. Therefore the small tractor is coming into popular use more and more, for it can pound away 24 hours a day if needed while the horse cannot work longer than 10 to 12 hours."

Trucks on the Farm

The Bureau of Crops estimates of the Department of Agriculture from actual studies made in 1918 estimated that the cost of hauling in wagons from farms to shipping points averaged about 30 cents per ton mile for wheat, 33 cents for corn and 48 cents for cotton; for hauling in motor trucks or by tractors, the averages were 15 cents for wheat and corn and 18 cents for cotton. Furthermore, motor trucks were able to make an average of 3.4 round trips per day over an average route from farm to railway shipping point of 11.3 miles while wagons made 1.2 round trips of 9 miles each. Motor trucks were able to move these commodities in little more than one-fourth the time required by horse and wagon.

The National Automobile Chamber of Commerce reports that on January 1, 1924, there were 400,000 motor trucks on farms in the United States. This constituted approximately one-fourth of the total number registered. Many farmers living within a reasonable distance of large towns now transport their produce to town by motor truck and market it directly, thus getting a better price for themselves while reducing the cost to the consumer. Motor trucks also are being used to a very considerable extent in moving milk from the farm to the creamery or railroad station. The time saved by the use of the motor truck for this purpose is of great importance in the transportation of a highly perishable commodity. A farmer may carry milk for several of his neighbors and beginning in this way, many farmers have developed rural trucking businesses on a large scale with regular routes and established schedules of rates.



Even the Home Folks use Cooper Engines

IT VERY often happens that a manufactured product is without honor in its home town. For example, if Cooper engines were not as good as our advertising would have you believe, many of you people in West Virginia, Texas or California might be a long time in learning the truth. But if you lived in Mt. Vernon and associated in both a business and social way with the men, who, with their own hands, build Cooper engines, you would very soon know the whole truth. Hence, it is significant that the Upham Gas Company, a Mt. Vernon company, with no connection whatever with the Cooper Company or any of its personnel, have just purchased their third Cooper 80 B.H.P. gas engine driven compressor. The first two were installed over a year ago.

Cooper engines are built and serve in a manner which will retain the confidence of those who daily pass our doorstep or those who live two thousand miles away.

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COOPER

A.L. Beaty on The Petroleum Triangle

The Texas Co. Chief Dissents Vigorously From the Pooling Proposition Presented By H. L. Doherty as Unconstitutional and Impractical

By Amos L. Beaty
President The Texas Co.
(Delivered before American Petroleum Institute, Fort Worth, Tex., December 9)

An important industry could not exist on an uninhabited no-man's-land. Besides the industry there must co-exist a public to be served and a government to maintain order. The industry itself is one side of the triangle. It includes those who furnish the capital, usually stockholders, who are presumed to derive revenue from investment, and the workers, who with brains or brawn earn their livelihood. The public at large, the consumers or patrons, constitutes another and important side. The third is the Government, which in addition to its direct interest as a consumer here and there, is the arbiter or umpire. We could not ignore the Government as a real factor, or, because of its interest as a consumer, merge it with others in that category, for it is undeniable the policies of Government, State and National, are important factors in our weal or woe, and the success and perpetuity of the Government itself depend largely upon the course of its industries. Nor would it be painting the picture to make demarkation between stockholders and workers, for in the industry they are one. Furthermore, we cannot lose sight of the fact that the industry and the public overlap. More than a million people of the United States are supported by salaries or wages drawn from the oil business and perhaps another million participate in the enjoyment of earnings otherwise.

Four Main Branches

The petroleum business has four major subdivisions or branches, (1) the production of crude, (2) refining or manufacture, (3) pipe line transportation and (4) marketing operations. And whether we consider it one business or several businesses, we cannot close our eyes to effects that flow in three directions from definite causes, or to reactions that may be expected. Yet in almost every instance instead of conflict there is coincidence of interest. It sometimes appears on the surface that what will benefit one side will injure another but when proper analysis is made this usually is found to be a mistake. Never were three interests subject more logically to accord.

What I intend to discuss is the three-sided aspect of some of our problems. I shall group them in relation to the four main branches of the business stated in the inverse order of the foregoing. I shall discuss marketing matters first and then travel back to the primary branch, crude production.

Sellers, consumers and the Government all have theories, not to say policies, some of which challenge careful consideration and may admit of improvement. At some stage accounts must be rendered. If marketers fail to treat consumers fairly the latter will demand a reckoning somewhere. If consumers become excited and cause the merchant to be harrassed by crazy legislation they will live to rue the day. Likewise the Government will suffer through the lack of support and respect, to say nothing of more direct loss, if it exceeds or falls short of what wise government should be. We are marooned in the world together, all in the midst of causes and effects, and none can escape the working of that system which is wiser and better than any man-made rule.

Selling Below Cost

During recent years we have seen several periods of overproduction and consequent low prices of gasoline. In several of these periods it has happened that some large marketing company, alarmed by the loss of gallonage, due to keen and continued competition, has seen fit to make extreme and sweeping price reductions. These reductions have been so extreme at times that plainly the marketing company was selling at a loss. Other companies found it necessary to meet the prices, the alternative being a loss of position, idle facilities and organization, and excessive accumulation of stocks. The result has been a general reduction of prices followed by actual losses. The initiation of a program of that kind may not violate laws which prohibit such selling to drive out or limit competition, and as a commercial proposition it may be justified on the theory of stabilization. It may even be justified on the theory that if a physician knows how to treat only one disease, and that disease is fits, he should start his treatment by throwing the patient into fits.

But selling below cost is certainly a drastic remedy. I have never felt like prescribing it and have often wondered about its efficacy. It has the effect of stabilization, also uniformity; it makes the business uniformly bad. Moreover, consumers are led to false conclusions. They reason that if the companies can sell gasoline for 10 cents today they can do the same thing tomorrow, and that there is profiteering when the price is 20 cents. Their impression in turn is reflected in the attitude of Government officials, with resulting investigations, questionnaires, conferences of Attorneys General, and complaints by the Federal Trade Commission. Merchants in every line of business are annoyed more or less by bootleg competition. The clothing merchant must contend with fire sales, bankruptcy sales, and other schemes or calamities, but I have noticed that those who are successful in the long run pay little attention to temporary disturbances of that kind. They pursue the even tenor of their way looking straight ahead. I wonder why we cannot come nearer doing that in our business.

Standard of Marketing

The giving of rebates and the making of special allowances should be condemned. There are laws designed to prevent such practices. One marketer justifies himself by the fact that others are doing it, and the others justify themselves by the fact that he is doing it. The giving of rebates is a miserable subterfuge. If the trade of some customers because of volume is more important than that of others it may afford ground for a price difference, just as there is a difference between wholesale and retail prices; but preference and favoritism shown among customers of the same class is wholly unjustifiable. And it is short-sighted. When one customer enjoys a rebate or special allowance, that fact travels over the grapevine telephone at a pace which would surprise the Radio Corp. of America. Every customer who is not so favored feels he is mistreated and is ready to switch his business at the first opportunity.

I believe in practical things and not too much in theories, but I think it is both practical and sensible to avoid discrimination between customers who are in the same class. If we would do this we would get along better with the trade and with each other, and our relations with the State would be more satisfactory. We should respect uniform price and anti-discrimination laws in their spirit and intent. I am making no charge against the head of any company or against any sales manager. I think most of them have too much vision and sense of fairness to approve foolish or narrow practices. The trouble is that the men in the field do not see the situation in a broad light. Perhaps they are not talked to enough. If they knew the views of their executives, if along with the order to move gallonage they received the gospel of fair play, conditions might improve. Please understand this is not holier-than-thou talk. I assume my full share of blame, whatever it is. No organization is perfect; no executive is so good or so wise that he is always in the clear. What I mean is that we, all of us, should work for a higher standard in marketing methods.

Wasteful Competition

Day by day the increase in marketing facilities goes on. The same company will provide facilities for the handling of its product, either directly or through others, to the extent of several service stations in the same zone, so that its own facilities force intra-company competition. Economically deplorable as this is, I know of no way to stop it, and presume it must run its course. It is one of the ills characteristic of competitive business. We all know that competitive business invariably loses in economy and that the only way to avoid this is to make the business non-competitive, which means monopoly and a worse evil. I think the time is coming, however, when the pump and tank pace will slacken. When production of product falls below consumption the surplus of marketing facilities will be reduced. At first the least efficient will be abandoned, then the next, and so on. Or, to put it another way, if a company has only a limited quantity of product to market, and that quantity is no more than the requirement of its facilities, it will naturally refrain from further installations.

If we ever reach the point, as I firmly believe we shall, when the problem is not how much we can market but how much we can obtain for the market, many of the now too numerous service stations will "fold their tents like the Arab." To my mind this is so plain and certain that it will admit of no denial. Suppose a given company which now has facilities for marketing 1,000,000 barrels annually finds itself able to obtain only 800,000 bbls. in a year: Will it try to maintain all of its present facilities? Instead of doing this it will dismantle those which are least profitable, those which are least justified economically, and maintain the others. The only time we have had a test of this was during the war when we had the gasless Sundays. We then saw stations that could not get product, and we saw stations closed.

Higher Prices in Future

I have spoken of the future time when distress gasoline will be a thing of the past, when there is not enough to supply the needs of the country. This may be a long way off, but if and when it does come prices will naturally go higher. The public and the umpire can then hark back to the day when the motorist could fill his car at 10 or 15 cents a gallon. It is not to be assumed, however, that new conditions will not be accepted as the

TELLING POINTS IN MR. BEATY'S SPEECH

Selling below cost is a drastic remedy for overproduction. It stabilizes by making business uniformly bad. Consumers are led to false conclusions. They reason if gas can be sold for 10 cents there is profiteering when the price is 20 cents, reflected in the attitude of Government officials. Merchants in every line are annoyed by bootleg competition. Those who are successful in the long run pay little attention to such temporary disturbances.

It is both practical and sensible to avoid discrimination between customers in the same class. If we would do this we would get along better with the trade and with each other.

Increase in marketing facilities presumably must run its course. It is one of the ills of competitive business. The time is coming when the pump and tank pace will slacken, when production falls below consumption and prices naturally go higher. We may see gasoline taxes oppress consumers and cut into our sales, bad for the industry, bad for the public and bad for the State.

There is an excess of refining capacity. Those who have built unwisely will lose.

The right to exclude implies the right to license the use of patents with restrictions. The public comes into full and free enjoyment of the invention at the expiration of the patent period of 17 years. So, after all, patents are not such a menace. They have served to stimulate invention.

It was a kind of a misnomer when they said they wanted the pipe line companies to become common carriers. What they really wanted was common purchasers. Lines operated solely as common carriers have been failures without exception; prosperity has attended only those fed by the large volume of traffic tendered by those who owned or controlled the lines.

There are insuperable difficulties in the way of the Doherty plan. In established pools it would impair the obligation of contracts, would take property without due process of law, and would be unconstitutional. The same could be said of property under lease.

The courts have seen that the adjoining owners was at liberty to protect himself by drilling on his own land. No equitable apportionment of royalties could be made under the Doherty idea until the pool was exhausted. This would apply also to bonuses and rentals. It is too late to talk about changing.

Petroleum fluctuates no more than many other staple commodities. In no period has production been out of line with consumption in any extraordinary percentage compared with many other products.

The problem of overproduction is not the most serious that can confront us. A more serious one is underproduction and we are certain to face it some day. Overproduction is checked automatically when prices reach a point where it is not profitable to produce.

may exist. Higher priced gasoline would mean more money being spent for crude, which in turn would mean stimulated activity in exploration and greater revenue for land owners. We are on firm footing when natural and economic laws are in play, as they always are, and those who do not understand resulting situations have only to learn.

Nearly all of the States now impose a tax of some amount on each gallon of gasoline sold. The tendency is pronounced and continuous. The States that are lower are inclined to increase their rates. Each seems afraid it may not obtain its proportion of revenue. What will be the situation when production declines and is less than potential consumption? I have said prices will advance. They will advance and these taxes will apply nevertheless and be passed on to consumers. They will be just that much added to a price already considered high for a product that must be had. They are not so objectionable when the price is low, and in most States they serve an important purpose. But when prices go high, high without the taxes, it may be found necessary to revise the rates downward. What the traffic can stand now it may not stand then. It is always difficult to reduce taxes, and we may see the time when these taxes will oppress consumers on the one hand and cut into our sales on the other. That will be bad for the industry, bad for the public and bad for the State.

Excess in Refining Capacity

There is an excess of refining capacity, and yet no more than would be expected under conditions that have prevailed. Fortunately, the worst that can happen is that those who have built unwisely will lose. Surplus capacity may be idle at the expense of the owner or it may be employed at the expense of the industry. Except in periods of excessive crude production it will not be the latter.

There has been agitation about cracking patents. Politicians have howled to the tune of a gasoline trust. All of that is pure bunk, and it will be known as such in the course of time. The Federal Government, a party to our triangle, has brought suit against some of us to enjoin certain clauses in contracts. I do not propose to discuss the merits of that case here. It will be tried in the courts and all parties will have to abide by the decision. But I should like to say that a superabundance of loose talk has been indulged in concerning the patents.

What is a patent? Are we against patents? Do we want to amend the constitution and take away from Congress the power to reward inventors? Would we repeal our system under which in science we lead the world? Should we write upon the portals of our scientific institutions, "Let him who enters here leave hope behind?" I should think it would be better for the coming generations, for those who will succeed us and those who will succeed them in turn, to be told as we have been told that if they betake themselves to study and research, that if they will burn the midnight lamp, they may expect pecuniary reward. Say what you please, but that is what makes the world go round.

You may say that the valuable patents find their way into the hands of the big corporations, but do not forget that either as an employe or as seller of the patent the original inventor receives compensation. Whether the compensation is adequate or not is something not involved here; it is the business of the inventor and those with whom he deals. The system itself is as good as any that could be devised, and if there is any fault in its operation it is only such fault as attends all human affairs. Do not forget the millions that have been spent in installation, experiments and rebuilding to bring this particular invention up to its present state.

Cracking Patents

Any refiner who desires to employ the cracking process is in position to do so upon payment of a fair royalty. I have heard of no complaint against the rate. If it were not reasonable in amount the Government would doubtless deal with the aspect of extortion. The fact that certain overlapping or near overlapping patents in a sense have been pooled inures to the benefit of licensees; it gives them clearer right and saves them from charges of infringement. The patents were issued by the Government, through

AMOS L. BEATY
President, The Texas Co.

a branch or bureau skilled in patent matters, the only one so skilled. And, while in this case there is an allegation that the principle of cracking is old, it is noticeable that no effort is made to cancel the patents.

The principle or fact of electricity is old. Yet even now we are not at the end of its development; and when one contemplates the hundreds of patents held by each of numerous large companies in the electric industries, the paths the courts have marked out for each to travel without encroaching upon the rights of others, one realizes there was not complete anticipation by Franklin when he pulled the lightning from the skies. There are numerous ways of cracking oil by the application of heat and pressure. Some are commercial while others would break the refiner more quickly than grand opera would break the commercial club at Rubensville. The law wisely denies reward to the dreaming inventor who can not make his dream come true and bestows it upon the practical man of science who can and does deliver something real, some that will work.

Patentable Improvements

What do we of this generation care whether someone 60 years ago patented a cracking process, if his invention was only partial and failed to embrace the vital elements essential to commercial use? It is of no interest to the twentieth century and of less moment to the courts. The law on this point is so well settled that its statement is not an invasion of the realm of legal discussion. We certainly know the real invention was not made 60 years ago, or else it fell into "innocuous desuetude" and there remained some 50 years. Such inventions once completed do not slumber. Those who have been in the refining business for the last 20 years know the art of cracking oil had its genesis in this period. Anything back of that was theory void of commercial practice, a thing at which the law smiles in pity. The patent office knows the situation, and it would be an interesting picture if we could see what the patent office thinks. It has repeatedly decided the very issue of patentability, and in considering the numerous applications coming before it in recent years has carefully drawn the lines between what is old and what is new. The patent bar of the country has watched every step with critical eye, and many questions have been litigated to a finish. True, patents are not always valid; but it is equally true that they are valid prima facie.

Every Patent a Monopoly

It should be borne in mind that every patent is a monopoly. The word is a terrible one, but the statement is true. Patents constitute one kind of monopoly that is lawful. Perhaps it would be better to call it protection. But whatever the name the same rule applies whether the patent is held by a large company or a small one, by a millionaire or a pauper. Our forefathers had the wisdom to include in the Constitution a section empowering Congress to provide for the issuance of patents on inventions and improvements. The primary purpose of the patent grant is to promote inventions for the perpetual good of all the people, giving the inventor a temporary reward, which he can realize by holding the patent or by selling it. That which the Government grants is a 17-year monopoly in terms. It carries the right to exclude others from using the invention during the life of the patent. The right to exclude implies the right to license with restrictions or upon any terms which the owner of the patent may elect to impose. The public comes into full and free enjoyment of the invention at the expiration of the patent period of 17 years. So, after all, patents are not such a menace, especially when it is remembered they have served to stimulate invention, and that invention is the outstanding feature of our age and civilization.

Pipe Line Privileges

The insistence upon pipe lines becoming common carriers, which voiced itself from time to time during a considerable number of years, has resulted in favor of the proposition. The subject is now somewhat generally covered by national and State laws, and pipe lines are common carriers. That part of the industry which owns and controls these lines was slow in recognizing the claim, and its tardiness resulted in some friction and feeling. Even today some of the companies are inclined to object and obstruct, but there are not many of them. It is better to face the issue squarely, as it should have been faced many years ago, and operate as common carriers so far as there is any real occasions for doing so. Those who have oil to transport can be served as an incident. The bulk of pipe line movement is and will continue to be for the companies that own the lines and which would not have built them except that they were needed in connection with established plants.

Pipe line companies enjoy the privilege of eminent domain and it is right that they should perform public service to the extent such service is required. This does not mean the owners should be prejudiced from moving their own product, but merely there should be no discrimination. The greatest friction was engendered when it was charged that large companies which were also producing in the fields, drawing from the same land and in competition with smaller producers, undertook to move their own oil and would neither purchase nor transport that of other porducers. It was but natural this should result in a demand for regulation. The small producers, however, were not thinking about transportation as much as they were about saving and selling their oil. It was a kind of misnomer when they said they wanted the pipe line companies to become common carriers. What they really wanted was common purchasers. This was reflected in the Oklahoma statute enacted nearly 20 years ago. The problem has been worked out fairly well, and it is seldom now one hears complaint. Good sportsmanship rather than laws did the work.

Shipping and Purchasing

A few years ago bills were introduced in Congress intended to apply the principle of the commodities clause of the Hepburn Act to interstate pipeage of oil. The effect would have been to preclude any person, firm or corporation owning and operating pipe lines from holding an interest in oil production or manufacture, and vice versa. Hearings were had and the matter was gone into fully, with the result that the committee to which the bills had been referred decided they were not worthy of a favorable report. It was demonstrated a measure of that kind would handicap the industry; less new pipe lines would be built under such laws; and the producer's last state would be worse than the first. It was shown pipe lines operated solely as common carriers in the past had been failures without exception, and prosperity had attended only those fed by the large volume of traffic tendered by those who owned or controlled the lines. This was another way

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CALIFORNIA'S SURPLUS OUTPUT SOON TO REACH VANISHING POINT

By D. M. Folsom
Before American Petroleum Institute, Fort Worth, Texas

To review briefly the three years from January 1, 1922 to January 1, 1925, California produced in this period a total of $34,000,000 bbls. of oil. The markets on the shores of the Pacific Ocean were expanded both by the normal growth of business and by the delivery of California products into new territory. The use of California oil in territory normally and properly supplied by this State has grow from 300,000 bbls. to 500,000 bbls. per day. This includes Pacific export markets new to California where our oil can be sold in competition with the production of other territory as long as our supply is adequate to both local and export demand.

California companies also sold and shipped in the past two years to the Atlantic Coast or to European markets which were not normally supplied from California, an average of 150,000 bbls. daily, or a total of over 100,000,000 bbls.

In other words, our sales for the past three years have totaled 562,000,000 bbls., of which nearly 20 per cent was the surplus oil delivered into Atlantic territory in direct competition with the output from Mid-Continent, Gulf Coast and Eastern fields.

In this period, California for the first time stepped out of a position of isolation and became an integral part of a world-wide industry.

In addition to these sales, it was necessary for the California companies to put into storage, an average of over 65,000 bbls. per day, or a total of 72,000,000 bbls.

I think we all learned something in this period, and on the Pacific Coast realized for the first time that oil was a commodity which could establish its own channels from a point of surplus to a point of demand, regardless of distance and regardless of established channels of trade.

Today, as a result of the increased requirements of Pacific Coast markets and as a result of the decline in production, we are on the point of turning back, as far as California is concerned, to a position where we will only be able to supply the demand of the Pacific Coast and such export markets as should ordinarily be served with California products.

California production has declined over 300,000 bbls. per day from the peak in September, 1923, and this decline is continuing steadily at the rate of about 2 per cent per month.

To be sure, we still have some surplus crude, and also have 120,000,000 bbls., or about one-quarter of the total volume of stored oil in the United States in our California tanks, but I believe that this surplus production will soon be reduced to the vanishing point, and furthermore that our supply of stored oil must be held as a reserve for our own requirements—First, because there is a real need on the

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Refinery Crude Runs Again Increase

Large Companies Boost Mid-Continent Operations to New Peak. Relationship Between Runs to Stills and Crude Prices Shown

By C. O. Willson

Due entirely to the increased operations of a few major plants, crude runs to stills at Mid-Continent refineries on December 1 were 18,035 bbls. greater than on November 1. All section—Oklahoma, Kansas, North Central Texas, North Louisiana and Arkansas showed increases over the November report, the total runs being 383,210 bbls. on December 1, establishing a new record for refinery operations in the Mid-Continent Field. This total includes the 6,000-bbl. daily runs of the Gulf Refining Co. at Fort Worth. This plant was operating on December 1 but has since been shut down. It is understood that the plant will not resume operations until some time in January.

The enlarged operations of three companies will more than account for the increased crude runs. Cosden & Co. during the month increased its runs to stills at its West Tulsa plant from 23,000 bbls. on November 1 to 32,000 bbls. on December 1. The Sinclair Refining Co. increased the crude runs of its four Mid-Continent plants located in Oklahoma and Kansas from 11,300 bbls. to 15,800 bbls. and the Standard Oil Co. of Kansas boosted its runs from 5,750 bbls. to 11,000 bbls. at its Neodesha, Kans., plant. These increases total 22,750 bbls. daily or 4,725 bbls. more than the total increase for the entire Mid-Continent area. These concerns have large crude supplies for their refineries although Cosden & Co. is drawing on its storage to maintain its present crude runs.

Outside of these three concerns there were only minor changes in the crude runs of the remaining 121 plants which are operating at the present time. A majority of the plants are maintaining their high operating status of November 1 and if additional crude supplies were available it is probable that a much greater increase would have been shown during the month due to the continued strength in the refined markets.

Gasoline prices advanced approximately 1½ cents a gallon at refineries in all sections of the Mid-Continent, and fuel oils, the other main product, advanced from 15 to 25 cents a barrel during the month of November. The remaining refined products occupy practically the same price position at the present time that they did on November 1.

As shown in Table No. 3, Mid-Continent refinery runs on December 1 were 104,445 bbls. greater than on the same date the previous year. Oklahoma has the largest increase with its crude runs to stills being 46,575 bbls. greater than in December of last year. All areas have a greater crude throughput, the increase in North Central Texas being 27,245 bbls., Kansas 20,725 bbls., North Louisiana 8,600 bbls., and Arkansas 1,300 bbls.

As previously indicated the record runs to stills of Mid-Continent refineries has resulted in a tight crude situation. The total crude oil production in the Mid-Continent area increased in November, the total being approximately the same as the increase in crude run to refineries during the month. Payment of premiums is prevalent where refiners have been able to secure more crude and in several fields no additional supplies are available regardless of price.

Effect on Crude Market

It has ben claimed that the status of Mid-Continent refinery operations has no importance in the crude markets of that area, the contention being that posted crude schedules are moved up or down by the major purchasing companies without regard to the combined operations of the smaller refinery organizations. While it is true that general conditions within the oil industry do in the final analysis determine Mid-Continent crude markets it so happens that these general conditions are ordinarily reflected in the Mid-Continent refinery markets which in turn, in the past, have had a direct relationship to the status of refinery operations in that area.

MID-CONTINENT REFINERY OPERATIONS

Table No. 1

Based on plants which have been in operation during the past year.

	No. Plants Dec. 1, '24	Capacities Dec. 1, '24	Plants Op. Dec. 1, '24	Dy. Runs Dec. 1, '24
Oklahoma	58	258,200	52	173,000
North Central Texas	45	164,250	40	88,285
*Kansas	27	135,300	21	78,925
North Louisiana	8	37,300	6	29,100
Arkansas	15	36,700	8	13,900
Total	153	631,750	127	383,210

*Includes three Missouri plants.

Table No. 2

Based on operations of all plants as of December 1, 1924, and November 1, 1924. (Capacities includes all plants regardless of how long they have been shut down.)

	No. Plants Dec. 1,'24	Capacities Dec. 1,'24	Plants Op. Dec. 1,'24	Dy. Runs Dec. 1,'24	Plants Op. Nov. 1.'24	Dy. Runs Nov. 1.'24	Dy. Inc. Dec. 1,'24
Oklahoma	103	357,600	52	173,000	52	167,350	5,650
North Cent. Texas	73	240,850	40	88,285	39	84,675	3,610
†Kansas	39	149,600	21	78,925	21	71,400	7,525
North Louisiana	17	48,580	6	29,100	7	28,400	700
Arkansas	16	14,700	8	13,900	9	13,350	550
Total	248	838,330	127	383,210	128	365,175	18,035

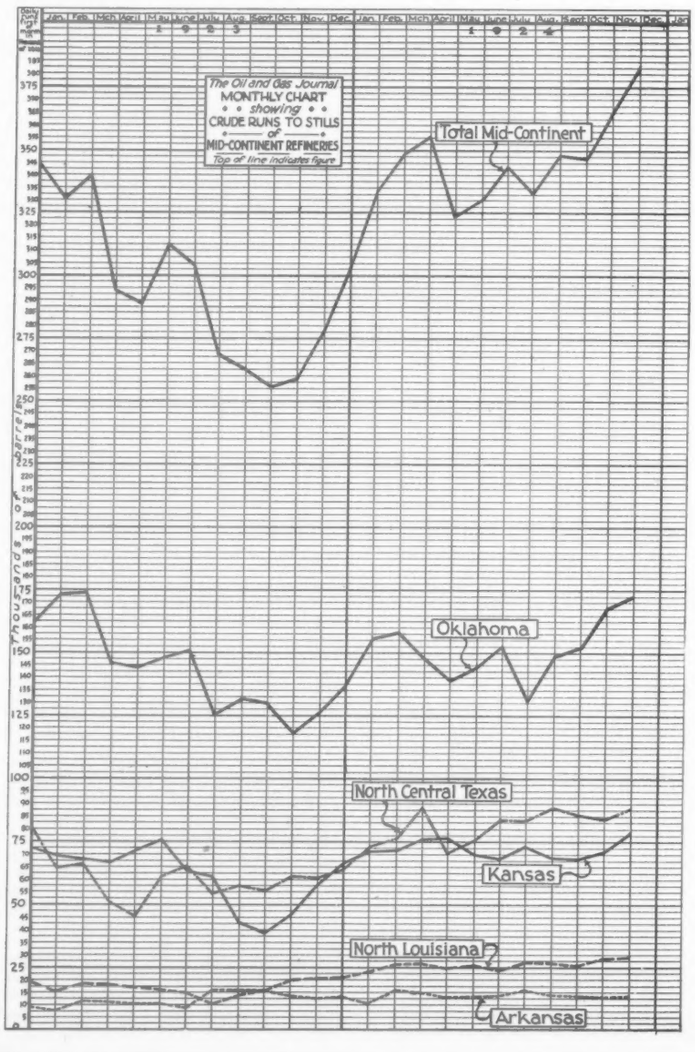
†Includes four Missouri plants.

Table No. 3

Based on operations of all plants as of December 1, 1924, and December 1, 1923.

	No. Plants Dec. 1,'23	Capacities Dec. 1,'23	Plants Op. Dec.. 1,'23	Dy. Runs Dec. 1,'23	Dy. Inc. Dec. 1,'24
Oklahoma	108	369,000	50	126,425	46,575
North Central Texas	70	217,350	34	61,040	27,245
*Kansas	43	131,100	22	58,200	20,725
North Louisiana	19	48,950	5	20,500	8,600
Arkansas	17	37,950	8	12,600	1,300
Total	256	804,350	119	278,765	104,445

*Includes four Missouri plants.



The following table clearly shows this relationship. The first column gives the date of The Oil and Gas Journal's monthly refinery survey. The second column gives the percentage relationship between the refinery crude runs the first of the month and the total crude production of the Mid-Continent Field at that time.

Date—	Percentage of Mid-Continent crude refined in Mid-Continent area	Status of crude market during month
1922—		
November 1	31.4	No change
December 1	31.8	No change
1923—		
January 1	34.4	Advance
February 1	37.7	Advance
March 1	39.5	No change
April 1	33	Reduction
May 1	31.1	Reduction
June 1	32.1	Proration
July 1	28.3	No change
August 1	25.5	No change
September 1	24.7	Reduction
October 1	25.6	No change
November 1	23.4	Reduction
December 1	28.1	No change
1924—		
January 1	34.2	Advance
February 1	37.5	Advance
March 1	37.8	Advance
April 1	37.7	No change
May 1	33	No change
June 1	32.8	No change
July 1	32.9	Reduction
August 1	32.4	No change
September 1	32.1	Reduction
October 1	32.8	No change
November 1	35.6	No change
December 1	36.8	No change

Reflected in Prices

The table shows that during the past two years when Mid-Continent refiners increased their plant operations or crude production declined or both situations developed at the same time so they were taking a larger percentage of the crude produced in the Mid-Continent Field, it has always been accompanied by higher crude prices as posted by the major purchasing companies. Similarly when these higher crude prices brought more crude than was needed or refiners curtailed their output due to unsatisfactory conditions in the refined market it was reflected in lower crude prices and also decreases in the percentage of total crude production which found its way to the stills of Mid-Continent refiners.

It will be recalled that in 1922 after an unsatisfactory market situation during the summer and early fall conditions began to improve the last two months of the year. As shown in the table, Mid-Continent refiners at that time were running from 31 to 32 per cent of the crude produced in the Mid-Continent pools. By January 1, 1923 this percentage had been increased to 34.4 per cent due to a decline in the production of the new Smackover Pool and an increase in crude runs to stills.. Posted crude prices advanced during January and also in February. By March the crude market had become easier, gasoline prices at the refineries were slumping and in April when the percentage basis had dropped to 33 per cent the first posted crude price reductions were announced. The unsatisfactory market situation continued until late fall. In November, with the peak production of the Powell Fields and Mid-Continent refinery runs near the low point of the year the percentage relationship dropped to 23.4 per cent. The last crude price of the year was announced during that month.

Percentage Relationship

The Powell production dropped off rapidly and due to improved refined markets, crude runs to stills were increased. By January of this year the percentage had increased to 34.2 per cent and the first crude advance was announced. For the remainder of the year it will be seen that the percentage relationship was practically a duplication of 1923 except that the percentages were not as low this year.

The percentage has been increasing since September and on December 1 had reached 36.8 per cent. Although no ad-

(Continued on Page 66)

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California Field Operations

By L. P. Stockman

Petroleum shipments from California to East Coast may continue at least until April or May. Development at Dominguez and Rosecrans expect to halt decline in crude production. Appreciable increase in output of former expected in near future. Conditions generally look bright.

LOS ANGELES, Calif., Dec. 6.—With the end of the year but a few weeks away, the industry is keeping an ear to the ground and watching closely for any developments which might indicate the policy of California operators during the coming year of 1925. The next 12 months will be a period of great importance to California, so full of possibilities is the future. Development work, production, refining and marketing are all important factors, but before considering these phases, let us glance at the prevailing conditions.

Production at present is running around 595,000 bbls. a day, the total output for the first 10 months being 193,500,957 bbls., of which 3,402,345 bbls. were added to storage in the form of crude, tops and fuel oil and 1,461,505 bbls. in a refined state. Shipments to the Atlantic and Gulf Coast have been averaging about 100,000 bbls. daily. California cannot economically assimilate 595,000 bbls. of crude oil daily.

True, production has been declining quite rapidly but we must anticipate a little reaction as a result of development work at Dominguez and Rosecrans. The latter will not take on any sizable dimensions until next summer, but the former is due for an appreciable increase soon. On the whole, however, things look bright since these two areas cannot precipitate another trying period such as has just been passed through. I would not be amiss in stating that California is approaching the dead line, that period which will once again mean partial isolation and comparative freedom from eastern competition.

Independent of East

Some are inclined to believe that California will cease to be dependent on Atlantic Coast refiners after January 1, working on the assumption that local companies will be able to store any surplus which might accumulate. This deduction is partially true, in fact, several California companies have already ceased to ship or have cut their movements down to an occasional loading. The General Petroleum and the Union were the first to restrict eastern shipments. The former's contract with the Atlantic Refining Co. was a rather elastic one and afforded a maximum of protection since the General Petroleum could limit the quantity. This contract is therefore to all intents and purposes completed. The Union has a little different arrangement with the Prudential but this contract is also regulated by the shippers' desires and is in a sense cancellable. The Shell occasionally loads a tanker or two for Tampico or Tuxpan but these shipments are the exception rather than the rule. This company, because of its affiliations, has a broader market than other California marketers and is taking advantage of the opportunity by exporting fuel oil and refined products to all points of the globe. Its tankers clear for many points in Europe, South America and the Orient. The Associated's contract with the Tide Water and Cities Service is a rather stiff one. Just what arrangement has been made to cover shipments after January 1 is unknown but this company will undoubtedly continue deliveries for several more months.

The Standard of California is by far the largest shipper of crude oil to the Atlantic Coast. Its contract with the Standard of New Jersey expires at the close of the current year and it is quite doubtful if the California company will agree to another time contract. The latter will probably propose an optional contract by which the California company can limit shipments. If this is done the Standard will probably continue shipping for at least several months. The California Petroleum has no alternative at present except to continue shipping to the Standard of New Jersey, although a limited market is available locally. This company's loadings have been on the decline during the past several months in sympathy with the drop in production. The California Petroleum has considerable production at Maricopa, Midway and Coalinga which is tied up by sales contracts until December 31. It is not known whether these sales agreements will be renewed or whether the oil will be delivered to some California company in the San Joaquin Valley in exchange for southern California crude at Los Angeles. In the latter case the California Petroleum would be in a position to keep up its shipments to the Standard of New Jersey by using this exchanged crude.

Status of Pan American

In view of the fact that officials of the New Jersey company inspected the California Petroleum's holdings in the San Joaquin Valley, several months ago, there seems to be some foundation to the rumor that the latter contemplated an exchange of some kind. With conditions improving in California it is quite possible, however, that a combination sales and exchange agreement might be entered into. The Pan American is an unknown quantity and its future loadings will undoubtedly be governed by conditions prevailing at the time. This company is making a very determined bid for recognition on the Pacific Coast and will be a big competitor in the future. Some 30 service stations are already in operation dispensing the company's products and it has developed a very good fuel oil market within a remarkably short time. The Pan American was recently awarded a big contract by the United States Shipping Board covering about 3,500,000 bbls. of fuel. Should a favorable decision be rendered by Judge Paul McCormick in the Pan American-Navy controversy, this company will be sitting on top of the world. The writer is of the opinion that Doheny will be given a clean slate. It is generally agreed that the result of the recent suit depends almost entirely on the legality and validity of the contracts made. The Government's attempt to prove fraud and corruption appeared ludicrous at times.

Petroleum in Storage

The enormous storage of crude, fuel oil and refined products held above ground in California is causing no little amount of discussion. Refined products have reached such enormous proportions that several plants have been shut down entirely, while many others are working at only about 60 per cent capacity. It is interesting to note in this connection that during the month of October the operating status was 69.5 per cent. This information was contained in the Bureau of Mines report for the period in question covering the operations of 38 refineries. The report also showed that the average daily run of crude oil to stills was only 400,172 bbls. A comparison of this latter figure with present production of crude shows a surplus of approximately 195,000 bbls. daily.

This is a very unsatisfactory condition in view of the fact that gasoline consumption during the next few months should show a drop because of the winter season. With this condition in mind several well informed oil men are advocating a cut in gasoline as a means of stimulating consumption. This policy hardly seems justified since there are so many other ways out of the difficulty without materially cutting into net profits. The present condition could be relieved by shipping some of the gasoline East and by doing so California operators would conserve their fuel oil, which has been in such demand for the past several months. It is a well known fact that eastern refiners and distributors would entertain a proposition of this kind, in fact, several have already made overtures to California companies. Local operators, however, realize that existing conditions are only temporary and are reluctant to part with this commodity which they will probably need within two years. Their position is justified to some extent in view of the fact that it is the production of refining crude which is declining in California and not the heavy. It may be possible, of course, that additional fields will be found to augment those producing light crude at present, in which event the return to normalcy will be slow. Several areas at present look good and at least one is almost sure fire.

In summing up the situation we find an abnormally large storage above ground and a probable continuance of the shipments to the East Coast consisting of either crude, tops or gasoline until at least next April or May.

Dominguez

As the result of the completion of two big wells, Dominguez maintained its position as the most interesting and fastest developing field in the State at present. The two wells added during the past seven days are particularly interesting in as much as they are the forerunner of several more to be finished during the next few weeks. The Associated's No. 4 De Francis ran true to form and came in doing 3,110 bbls. daily. It was drilled to 4,300 feet and finished with a 6¼-inch oil string carrying 380 feet of 60-mesh screen. The oil, which tests 32.1 degrees and shows a cut of 1 per cent, is flowing through a ⅞-inch bean under a pressure of 510 pounds. The company has five other holes on this lease speeding down to the pay, three of which look good for completion within the next two weeks.

No. 1-B, the jinx well, so-called because of its two disastrous gas blowouts which wrecked the hole in each case and required a new location each time, is going ahead at 3,700 feet with a string of 8¼-inch scheduled to be landed at 3,877 feet. Nos. 2 and 3 have both reached the latter depth and are standing cemented. No. 6, with about 1,200 feet of hole to go, has just passed the 3,100-foot level. A fishing job is holding up No. 5, which was down 2,872 feet when the mishap occurred. The crew was unable to recover the lost drill pipe but is sidetracking it at 2,471 feet.

The Bell-Little Drilling Co. finished No. 3 Dominguez and presented the Marland Oil Co. with a 1,500-bbl. producer, the oil being clean and testing 30.8 degrees. It was drilled to 4,294 feet and finished with a 6¼-inch oil string carrying 260 feet of 60-mesh screen. This gives the Marland three producers on this lease good for 4,500 bbls. a day in the aggregate and, although No. 2 is off production and being cleaned out, it should be put back on very shortly. No. 4, the company's most westerly hole, is in the oil sand at 4,300 feet and looks good for a completion within the next two weeks. The company has transferred the crew from No. 3, just completed, to No. 5 and will spud in this offset to the United's No. 4 Dominguez within the next few days. The finishing touches are being put on the rig for No. 6 and the crew from No. 4, now nearing completion, will undoubtedly be transferred to this new hole for work.

Both the Shell and United Oil Companies encountered water trouble in one well in this area. The United's No. 2 Dominguez has been cemented at 4,104 feet, while the Shell has cemented No. 2 Manuel for the second time at 3,958 feet. No. 1 Manuel at 4,079 feet, due east of No. 2 on the same property secured a satisfactory shut off and is going down for the sand expected around 4,250 feet. No. 4 Manuel at 2,820 feet and No. 5 Manuel at 3,875 feet are located in the northwestern part of this issue and are practically in proven territory. In addition to these potential producers on the Manuel property, the Shell has several holes on the Reyes lease which should appear in the producing column in the near future. No. 13 Reyes at 3,802 feet, No. 16 at 3,710 feet, No. 17 at 4,011

(Continued on Page 142)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Agwilake, November 25, New York, crude	90,117
Agwismith, November 26, New York, crude	106,137
John D. Archbold, November 27, New York, crude	139,711
Hagan, November 28, New York, crude	63,781
James McGee, November 28, New York, crude	116,094
Agwistone, November 30, New York, crude	105,484
Coastwise	
D. G. Scofield, November 25, Richmond, crude	77,607
Los Angeles, November 26, Martinez, crude	75,938
La Placentia, November 27, Martinez, crude	76,916
Meton, November 27, Seattle, fuel	70,488
Lubrico, November 27, Richmond, crude	86,414
Warwick, November 28, Martinez, refined	45,680
R. J. Hanna, November 28, Point Wells, fuel	80,017
Lebec, November 29, Everett, fuel	74,027
D. G. Scofield, November 30, Richmond, crude	76,226
Exports	
Salina, November 24, Manila, fuel	55,143
Kiyo Maru (Jap.), November 25, Japan crude,	65,168
Silver Shell, November 25, China, refined	60,199
Kanju Maru (Jap.), November 26, Japan, crude	55,734
El Cano (Span.), November 26, Balboa, fuel	47,922
F. H. Hillman, November 26, London, refined	113,855
Argyll (Fr.), November 26, Chile, fuel	30,041
Manju Maru (Jap.), November 26, Japan, crude	58,019
Mina Brea (Br.), November 28, Vancouver, crude	46,434
Emidio, November 29, London, refined	75,933
From San Francisco	
Richmond, November 24, Seattle, fuel	64,019
Kewanee, November 24, Los Angeles, refined	27,369
H. T. Harper, November 25, Honiulu, refined	32,809
Vacoil, November 26, Philadelphia, refined	67,142
W. S. Miller, November 27, Point Wells, fuel	73,405
Liebre, November 29, Portland, fuel	64,712
El Segundo, November 30, Point Wells, refined	33,267
From Port San Luis	
Deroche, November 26, Oleum, crude	73,680

Gulf Coast Oil Operations

By P. L. McGreal

Declines in Goose Creek, Humble and Orange Pools. Gulf Production Co.'s No. 1 Granger, Orange Pool, flows 1,500 bbls. The Texas Co.'s No. 1 McCray, Vinton Pool, came in flowing 800 bbls., but dropped to 200, making considerable water. Jim Hogg well choked to 1,200. Vacuum Co.'s Lake Charles, 960.

HOUSTON, Tex., Dec. 8.—Gross production in both the Gulf Coast Pools and the Southwest fields is slipping. In the coastal area it is again hovering around the 80,000-bbl. mark, such pools as Goose Creek, Humble and Orange all showing decreases. In the other pools the program of working over old wells has not maintained the daily average. Offsetting these declines, however, are such prospects as Big Creek Pool in Fort Bend County and the new development near Lake Charles, La., where some big wells are expected. Then there are the recent new saline domes at Orchard and Wisdom and between Big Creek and Damon Mound, where tests are being drilled to locate the oil sands, supposedly off the sides of the saline domes. These three late discoveries are all in Fort Bend County and as yet their value is problematical, being still in the experimental stage.

In addition to these there is ever the possibility of production being developed at such places as Hockley Dome in Harris County; Big Hill in Jefferson County; High Island in Galveston County; Stratton Ridge and Bryan Heights in Brazoria County, places in coastal Louisiana, Barber Hill in Chambers County and spots in Liberty County. These are all known saline domes, around which much experimental drilling has been done and some work is now under way. No person can tell when they are liable to flash forth as productive areas. It requires years to develop these saline domes in the Gulf Coast region and production may be found when least expected. It is this uncertainty that gives zest to wildcatting in South Texas and South Louisiana.

The advent of cold weather in the Northern States brings a stronger demand for coastal crude from refiners for the manufacture of zero cold test lubricating grades of refined. Also, contracts with large plants for lubricating oils are usually made early in January for the year. The coastal grade also enters as a factor in the fuel oil markets, all of which considerations give the operator confidence in the present posted prices remaining at the present level, if not actually given another boost.

Eleven wells were completed during the week, with only 2,575 bbls. new production, compared with 22 completions last week and 1,087 bbls. new output. The dry holes number 5 and one salt water well. Nine wells were bailing at the close of the week.

Estimated Average Gross Production

The estimated daily average gross production in the coastal pools for the week is placed at 80,224 bbls. against 82,175 bbls. last week, or a decline of 1,951 bbls. In the Southwest fields the estimate is placed at 43,595 bbls. compared with 44,665 bbls. last week. The well in Jim Hogg County is choked down to 1,200 bbls., having been lowered to 800 bbls. at times to ease up on storage capacity. The well of the Vacuum Oil Co. near Lake Charles, La. is credited with an average of 950 bbls. per day in the miscellaneous column. The following is the gross for each district:

District—	Gross Bbls.
Batson	1,610
Blue Ridge	750
Barber Hill	145
Big Creek	2,500
Dayton	90
Damon Mound	1,320
Edgerly (La.)	550
Goose Creek	9,950
Humble	5,150
Hull	15,350
Jennings (La.)	945
Markham	200
Orange	14,449
Pierce Junction	605
Spindletop	1,270
Saratoga	1,510
Sour Lake	4,050
Vinton (La.)	6,086
Welsh-Anse La Bute	95
West Columbia	12,450
*Miscellaneous	1,150
Total	80,224
Southwest Fields—	
Luling	34,400
Laredo districts	4,370
Somerset	2,610
Calliham	545
Rockdale-Minerva	470
Jim Hogg County	1,200
Total	43,595
Grand total	123,819
Grand total last week	126,840
Decrease	3,021

*Lake Charles district, 950 bbls. Balance between High Island, Big Hill, Hockley, Nacogdoches and other places.

Completions During the Week

The Orange Pool furnished the best well of the week, the Gulf Production Co.'s No. 1 Granger in the southeast part of the pool, flowing 1,500 bbls. at 4,500 feet. Same company's No. 8 Kishi-Lang is flowing 100 bbls. by heads from 5,081 feet. The Sun Oil Co.'s No. 4 Brown bailed dry at 4,450 feet. The American National Oil Co.'s No. 1 Winifree, 1 mile north and east of production bailed salt water at 4,675 feet. The liner is being pulled to reset strainer and packer. The Gulf Co.'s No. 2 Chesson blew out at 4,700 feet. The gas ignited and burned the derrick and spread to No. 6 Chesson, burning the derrick and pumping equipment. The derrick over the Humble Oil & Refining Co.'s No. 1 Winifree, in the path of the flames, was pulled down and the fire died out.

In the Hull Pool, the Gulf Production Co.'s No. 13 Scarborough will make a pumper after deepening to 3,500 feet. The Republic Production-Houston Oil Co.s' No. 93 Dolbear is bailing at 2,400 feet.

In the Goose Creek Pool, the Sun Oil Co.'s No. 2 Bartlett-Smith is pumping 25 bbls. at 2,550 feet, after being worked over. The Gulf Production Co. is bailing No. 6 Wright at 1,600 feet and also No. 4 Hirsch in the bay at 4,400 feet. The Marland Oil & Refining Co. is testing out the north end of the Ashbel Smith tract with a seismograph, or "dynamiter," trying to find a salt mass. The Goose Creek district is one of the few pool in which the saline dome has never been located. Some geologists contend no dome exists and others that it is out in the bay, a shallow body of water on the south and southeast sides of the pool. The results of the dynamite discharges are still unknown, but scores of windows have been shattered in the towns of Goose Creek and Pelly. The concussions broke windows 2 miles away, due, it is said, to atmospheric conditions. At this time of the year heavy fogs envelop the Gulf of Mexico and bays and extend inland as far as Houston, 50 miles distant from the Gulf.

In the Batson Pool, Andrews & Munson's No. 3 Hodges was a failure at 3,136 feet and is being sidetracked to test a sand at 2,811 feet. It is the third deep test on the Hodges 200 acres, all failures although showing oil and strong gas pressures. W. B. Flynn abandoned No. 2 Donohoe as a salt water hole at 2,325 feet. The Ada Belle Oil Co.'s No. 81 Wise is bailing at 1,150 feet. It was a gasser last week.

The Gulf Production Co. is bailing No. 54 Tarver-Hardin on the north side of the Sour Lake Pool at 1,970 feet. At Damon Mound, Hamm & Co.'s No. 1 Bryan is bailing at 1,503 feet with 25 feet of screen set in that thickness of fine sand. It was drilled deeper from 1,350 feet where it bailed black sulphur water.

The Gulf Production Co.'s No. 2 Moore, near Orchard, Fort Bend County, went into gyp rock at 400 feet and was abandoned. No. 1 Moore got the same formation at 370 feet. A location has been made for No. 3 Moore.

South Louisiana

In the Jennings Pool, The Texas Co.'s No. 49 Latrielle bailed salt water at 1,875 feet. The Gulf Refining Co.'s No. 25 Jennings-Chicago is bailing at 2,325 feet.

In the Vinton Pool, The Texas Co.'s No. 1 M. Gray came in flowing 800 bbls. at 3,225 feet, 35 gravity, or far above the usual coastal gravity. It dropped to 200 bbls. and is making considerable water. It is on the west side of the pool. The same company's No. 26 Gray was abandoned in salt water at 1,100 feet. The Vinton Petroleum Co.'s No. 13 Vincent is bailing at 2,850 feet, as is Wilson & Broach's No. 6 Parks at 2,425 feet.

Down in Duval County, Texas, the Humble Oil & Refining Co. junked and abandoned No. 5 Singer on the southwest side of the Palangana Dome at 1,400 feet. It showed some oil and gas in a sand at 1,100 feet. The National Oil Co. is drilling on the southeast side of the dome. The Union Sulphur Co. has 15 wells on the dome showing a sulphur deposit and has six rigs running. The sulphur is found between 400 and 500 feet. In the old Piedras Pintas Pool at Noleda, the Humble Oil & Refining Co. has a location for No. 3 Walsh. The Progress Oil Co.'s No. 1 is idle. A. L. Jack has a location for No. 1 off the dome.

Drilling in the Pools

But little change is noted in the progress of the tests drilling in the various pools from the depths given in last week's review. In the Hull Pool, the Gulf Production Co. is rigging up to drill Nos. 38, 44 and 45 Phoenix on the southeast side, No. 8 Morris-Phillips on the northeast side, No. 11 Baldwin fee on the south and No. 16 Hannah fee on the west side of the dome. The Mecom Oil Co.'s No. 6 Mecom on the northwest side is still fishing. It came in two weeks ago and flowed 3,000 bbls. for two days and then sanded. The Higgins Oil & Fuel Co.'s No. 5 Taylor is starting on the northeast side.

Most of the holes drilling in the Orange Pool are deep, searching for the sands found by the Mutual Oil Co. on the Chesson and by the Sun Oil Co. and Brownie-Babbittee Oil Co. on the Brown tract. On State land in Cow Bayou, the Rycade Petroleum Co.'s No. 1-E is below 4,380 feet and No. 8 below 4,924 feet. No. 5-A is fishing at 3,435 feet. No. 14 is drilling at 5,300 feet. The Mutual Oil Co.'s Nos. 6, 7 and 9 Chesson are drilling deeper. The Gulf Production Co.'s Nos. 4-A Chesson and 17 Hager fee are rigging. It is drilling Nos. 10 Hager-Moore, 3 Chesson, 2 Chesson, 8 Pevito, and 2 Hamman-Consolidated. The Humble Oil & Refining Co. is drilling Nos. 11 Winifree, 14-A Chesson, 21 Chesson and starting No. 9-B Chesson. Cameron and others' No. 2 State Land in Cow Bayou is working over. The Kishi Development Co.'s No. 5 McGuire, on the east side of the Bayou is drilling around 1,825 feet. The Sun Oil Co. has a derrick up for No. 8 Gunstream.

In the Goose Creek Pool, the Humble Oil & Refining Co. is drilling No. 5 Jones in the bay and Nos. 59 and 60 Smith on the east side. No. 6 Tabb is around 1,650 feet. The Gulf Production Co. is drilling Nos. 8 Chapman-Bryan, 21-A Wright, nearing 5,000 feet; 15 Smith, 8 Producers, 17 State Land and 8 Tabb.

The Southern Exploration Co.'s No. 2 Wright is deepening at 2,435 feet. The Inca Production Co.'s No. 2 Duke is around 1,450 feet. The Gulf Coast-United Central Oil Co.'s No. 40 Galliard is around 2,475 feet. The Copeland Oil Co.'s No. 5 Bryan is at 3,255 feet. The Hisgen Petroleum Co.'s No. 2 Busch, northwest of production, is below 3,810 feet.

Hardin County Pools

In the Batson Pool, the Paraffin Oil Co.'s No. 59 fee is at 655 feet. The Acorn Oil Co.'s No. 48 Paraffin is at 680 feet and Cavitt's No. 2 King below 1,200 feet.

The Sun Oil Co.'s No. 58 T. C. in the Saratoga Pool is at 900 feet. In the Sour Lake Pool, The Texas Co. is deepening No. 296 fee. The Sun Oil Co.'s No. 59 Bass & Eastham is below 875 feet. The Gulf Co. is deepening No. 51 Hardin-Tarver. Pevito and others' No. 10 Carpenter is rigging, as is the Lake View Oil Co.'s No. 41 Hardin. The Humble Oil & Refining Co.'s No. 38 Hardin is drilling deeper.

In the Spindletop Pool, Wilson & Broach's No. 12 Fort Worth is drilling around 800 feet. The Williams Oil Co. is rigging. No. 1 Gladys and the McKinney Oil Co.'s No. 1 Gladys.

In the Markham Pool, the Rycade Petroleum Co.'s No. 1 Gray is below 4,230 feet. The company has made a location for No. 2 Gray.

At Pierce Junction, the Gulf Production Co.'s No. 9 Talor is deepening at 2,900 feet and H. R. Cullen's No. 5 Howe is drilling at 3,450 feet.

In the West Columbia Pool, The Texas Co. worked over No. 66 Hogg into a pumper at 3,200 feet. The Humble Oil & Refining Co. is deepening No. 5 Coon at 2,344 feet and starting No. 12 Pipkin-Lee. The Hyde Production Co.'s No. 6 Underwood is rigging.

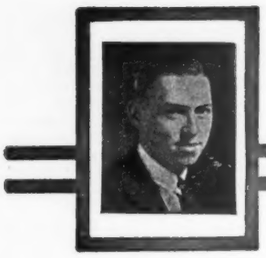
South Louisiana Pools

In the Edgerly Pool, the Roxana Petroleum Corp. is rigging No. 1 Foster. In the Jennings Pool Hines & Co. is rigging No. 5 Martin.

In the Vinton Pool, Marrs McLean's No. 5 Gray is idle at 3,050 feet. The Edgerly Petroleum Co.'s No. 2 Lizze is drilling at 3,370 feet with No. 1 Vincent working over. The Just Oil & Refining Co.'s No. 1 Weeks is shut down at 1,850 feet with the drill pipe stuck in the hole. The Vinton Petroleum Co.'s No. 14 Vincent is sidetracking at 3,000 feet. The Gulf Refining Co.'s No. 34 Star is at 975 feet with No. 2 Vincent rigging to drill deeper as is No. 45 G. N. G. The Sun Oil Co. has a location for No. 3 Johnston.

JAPAN'S NEW REFINERY

The Japanese "Petroleum Times" says the Tsurumi refinery of the Nippon Oil Co., the construction of which has been delayed on two different occasions by earthquakes, has been completed. This refinery is important from its unusual accessibility, on Japan's Pacific Coast, and from its possession of a cracking plant. It has been reported that the gasoline from this plant gave very satisfactory results in the experiments on various automobiles and trucks. It was found to yield great power and contrary to expectations to have very little offensive odor.



Oklahoma Field Operations

By C. D. Lockwood

Production in all the big pools showed some decline towards the close of the past week. Cromwell Field extended northeasterly. Another producer in the Roxana Pool in Township 8-8. Deeper pay uncovered in Sholem Alechem Pool. Holm & Jarvis wildcat gets another show.

Extensions to the Cromwell area, the discovery of a deeper pay in the Sholem Alechem Pool in Carter County and the wonderful staying qualities of the deep sand in Tonkawa were the principal features of the week's developments in the Oklahoma field. A revival of hope that the Independent Oil & Gas Co. and the Holm & Jarvis' wildcat in Section 7-9-8, Seminole County, may yet make a producer and open a pool came when the test was reported to have a showing in sand found at 3,610 feet, drilled in 4 feet. A dry hole test about three-quarters of a mile northwest of the discovery well in the Braman Pool, in Township 29-1w, Kay County, was significant.

Production as of Friday, December 5 showed Cromwell with 43,294 bbls., a loss of 4,666 bbls., compared with the production of Friday, November 28; Tonkawa, 109,434 bbls., a decrease of 185 bbls.; Burbank, 70,864 bbls., or 937 bbls. less than that of the previous Friday; Papoose, 29,242 bbls., a falling off of 1,758 bbls.; Wewoka, 12,264 bbls., a drop of 1,272 bbls.; Stroud, 3,925 bbls., a falling off of 137 bbls. Every one of the pools most in the public eye fell off in output more or less in the course of the week.

The Gypsy Oil Co.'s No. 3 Yahola, C NW SW SW, Section 3-10-8, Seminole County, extended the Cromwell Pool a location east and is now the most northeasterly well in that area. It got gas sand at 3,357 feet, oil at 3,381 feet and was shut down with a showing of 5,000,000 feet of gas and 5 bbls. of oil per hour. Total depth was 3,417 feet. The Central National Oil Co.'s offset was flowing 500 bbls. from sand at 3,356-3,404 feet.

In the Papoose Pool Thomas B. Slick's No. 2 I. Alexander, C SE NE NW, Section 2-9-9, was flowing 65 bbls. an hour from sand at 3,327 feet, drilled in 10 feet. The Independent Oil & Gas Co.'s No. 1 I. Alexander, C SW NW NE, Section 2-9-9, increased its production to 65 bbls. an hour when drilled to 3,352 feet. The company increased the production of No. 1 S. Alexander, C NW NE NE, Section 2-9-9, to 85 bbls. an hour by drilling to 3,360 feet. This well, which is the farthest east of the wells in the pool, is showing about 1½ per cent of cut oil. The Cosden Oil & Gas Co.'s No. 9 Alexander, C NW SW NW, Section 3-9-9, got the top of the sand at 3,289 feet, and at a total depth of 3,329 feet was making 20,000,000 feet of gas and about 325 bbls. of oil a day, with a slight trace of water.

The Shaffer Oil & Refining Co.'s No. 5 Perryman, SE cor. NW NW, Section 32-8-8, Wewoka Field, was good for 18 bbls. an hour from sand at 3,215 feet, drilled in 5 feet.

Third Well in Roxana Pool

The new pool, opened by the Roxana Petroleum Corp. in Section 12-8-8, has its third producing well, the same company's No. 2 Culler, NE cor. NW NW, Section 12-8-8, finding sand at 3,420 feet and oil at 3425 feet. At 3,435 feet the well commenced flowing every hour with about 10 bbls. to each discharge. No gas was evident. The hole filled with oil and then made its regular 10-bbl. flows. The same company is drilling No. 3, NW cor. Section 12. The Dixie Oil Co. was shut down with a hole full of water in No. 1 Larney, C NE NE NE, Section 11-8-8, total depth 3,464 feet. The Berry Petroleum Co.'s No. 1, C SE SW SW, Section 1-8-8, was drilling at 3,369 feet and No. 2 is at 800 feet. The Southwestern Petroleum Co. was down 3,000 feet in No. 1 Manley, SE cor. SE, Section 1-8-8.

The Cromwell Pool has 208 producing wells, 60 rigs up and locations staked and 99 wells drilling.

In the Tonkawa Field

The Comar Oil Co.'s No. 8-W Endicott, C NE NW SW, Section 35-25-1w, in the Tonkawa Field, found the sand at 3,955-4,003 feet, and made 803 bbls. the first 24 hours.

The Gypsy Oil Co.'s No. 83 Shawver, NW cor. NE NW, Section 2-24-1w, was deepened to 4,080 feet, and was flowing 3,000 bbls. a day.

Results in Braman Pool

The Braman Pool in Kay County has been cut off to the northwest by the failure of the Twin State Oil Co.'s No. 1 Moore, SE cor. SE, Section 17-29-1w, which is a hole full of water at 2,176 feet. Water was found in both sands, topped at 2,030 feet and 2,176 feet. This test was drilled one-half mile north and a mile west of the discovery well on the Duncan farm, drilled by the Comar Oil Co., C NW NW SE, Section 21, which started at 1,775 bbls. a day from Hoover sand found at 2,072-88 feet. The discovery well is holding up very satisfactorily and on Saturday was flowing at the rate of 1,200 bbls. a day. A diagonal offset to the discovery well, the Comar Oil Co.'s No. 1 Triboth, C SE SE NW, Section 21-29-1w, got the gas sand at 2,051-61 feet and the oil sand at 2,063-68 feet and flowed 826 bbls. the first day and 764 bbls. the second day. Later it was given a 40-quart shot and for a time flowed 40 bbls. an hour. Comar Oil Co.'s No. 1 B. McCormack, NW cor. SW SE, Section 21-29-1w, had 500 feet of oil in the hole from 1,941-1,943 feet. It is through the sand and drilling at 1,945 feet.

The Comar Oil Co.'s No. 4-W Clements, NE cor. SE NW, Section 34-25-1w, got oil sand at 4,101-4,148 feet, and was producing 2,860 bbls. naturally. No. 8-W Endicott, NE cor. NE SE, Section 34-25-1w, got the pay at 3,955-4,003 feet, and was making 854 bbls. naturally. The Healdton Oil & Gas Co.'s No. 2-C Rence, C E half NW NW, Section 11-24-1w, got oil sand between 2,596 and 2,623 feet, and drilled to 2,637 feet. It was swabbing 12 bbls.

The Mid-Co Petroleum Corp.'s No. 11-A Case, SE cor. NW SE NW, Section 29-24-1w, was getting 6 bbls. from 1,998 feet to 2,026 feet after shooting with 80 quarts.

The Comar Oil Co.'s No. 13-W Blubaugh, SW cor. NW SW Section 2-24-1w, was spudding at 186 feet, and No. 14-W Blubaugh, SE cor. NW SW, Section 2-24-1w at 155 feet; No. 17-W Blubaugh, SW cor. NE SW, Section 2-24-1w, drilling at 760 feet; No. 3-W Ruzek, NE cor. NE SE, Section 3-24-1w, spudding in at 102 feet.

Record-Breaking Producer

Attention has recently been called to the wonderful productiveness of three high-grade oil wells in Kay County, all producing from a deep sand. The Wentz Oil Corp.'s No. 45 on the McKee farm, in Section 34-25-1w, has produced over 800,000 bbls. since August 4, when it came in, and on Saturday was flowing 7,680 bbls a day. The Carter Oil Co.'s No. 1 Hays in Section 15-27-3e, Mervine Field, has produced around 920.000 bbls. since December, 1918, a period of six years, and is adding 200 bbls. a day to the amount at the present time. The Marland Refining Co.'s No. 6 Brett, Section 8-25-2e, in the South Ponca City Field, has been producing since June 20, 1919, and has made a record of about 662,000 bbls. and is still good for 125 bbls. a day.

The Wentz Oil Corp.'s No. 45 McKee is undoubtedly the biggest initial producer of high-grade oil of any well ever drilled west of the Mississippi River. There have been bigger wells but they produced a lower gravity of crude. It is necessary to go back to Pennsylvania to find a bigger high-grade initial producer than the Wentz well. On September 26, 1891, Greenlee & Frost brought in a well near the town of Oakdale in the McDonlald Field which started at 650 bbls. an hour and later when placed under control gauged 14,000 bbls. a day but pipe trouble developed and the production fell off greatly. This well was still producing, although in small quantity, as late as a year ago. In volume of production the Wentz Oil Corp.'s well will greatly surpass Greenlee & Frost's well and it will undoubtedly develop the largest total production of any high-grade oil well in this country.

Oklahoma Production

Daily average production in the Burbank Field by companies for the week ended December 3 was as follows:

Company—	Wells	Bbls.
Carter Oil Co.	219	11,161
Comar Oil Co.	7	162
Cosden Oil & Gas Co.	105	3,249
Devonian Oil Co.	16	218
Gardner Petroleum Co.	20	483
Gypsy Oil Co.	196	5,612
Kewanee Oil & Gas Co.	25	539
Laurel Oil & Gas Co.	16	245
Lorraine Oil & Gas Co.	15	159
Midland Oil Co.	37	1,679
Mid-Kansas Oil & Gas Co.	39	1,511
Peters & Oliphant	2	189
Phillips Petroleum Co.	109	13,830
Phillips Petroleum Co. and Delmar Oil Co.	16	1,817
Phillips Petroleum Co. and Skelly Oil Co.	174	5,489
Prairie Oil & Gas Co.	106	3,371
Producers & Refiners Corp.	29	435
Roxana Petroleum Corp.	55	722
Simons-Moore et al	29	266
Sinclair Oil & Gas Co.	146	2,949
Tidal-Osage Oil Co.	43	746
Skelly Oil Co.	22	1,147
Tidal-Osage Oil Co.	43	746
The Texas Co.	6	499
Twin State Oil Co.	24	1,258
Total	1,455	57,736
Kay County Extension—		
George Boles	3	377
Carter Oil Co.	11	1,373
Comar Oil Co.	19	1,004
Cosden Oil & Gas Co.	16	1,121
Gypsy Oil Co.	19	598
Laurel Oil & Gas Co.	5	322
Mid-Kansas Oil & Gas Co.	10	1,024
Phillips Petroleum Co.	31	3,845
Pure Oil Co.	5	353
Prairie Oil & Gas Co.	4	279
Roxana Petroleum Corp.	8	236
Dye-Tomlinson et al	8	639
Skelly Oil Co. & Phillips Petroleum Co.	20	581
The Texas Co.	16	362
Sinclair Oil & Gas Co.	5	347
Twin State Oil Co.	15	874
Total	195	13,345

Daily average pipe line runs from the Burbank Field for the week ending December 3 were as follows: Gulf Pipe Line Co., 8,636 bbls.; Cosden Pipe Line Co., 9,564 bbls.; Kay County Gas Co., 3,119 bbls.; Osage Pipe Line Co., 2,209 bbls.; Oklahoma Pipe Line Co., 17,951 bbls.; Prairie Pipe Line Co., 7,270 bbls.; Sinclair; Pipe Line Co., 3,296 bbls.; Moore Refining Co., 1,526 bbls.; Standish Pipe Line Co., 9,647 bbls.; Empire Pipe Line Co., 1,366 bbls.; Mid-Kansas Oil & Gs Co., 2,575 bbls.; Twin State Oil Co., 1,133 bbls.; Ozark Pipe Line Co., 1,500 bbls.; Delmar storage, 1,196 bbls.

Production in Tonkawa

Daily average production in Tonkawa by companies for week ending December 3 were as follows:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	37	10,449
Blackwell Oil & Gas Co.	33	8,624
Carter Oil Co.	6	132
Champlin Refining Co.	2	19
Champlin Refining Co. and Twin State Oil Co.	1	27
Comar Oil Co.	341	39,690
Cosden Oil & Gas Co. and Marland Refining Co.	18	255
Gypsy Oil Co.	99	12,581
Healdton Oil & Gas Co.	37	1,331
Wentz Oil Corp.	46	12,356
McMan Oil & Gas Co.	1	3
Pennok Oil Co.	32	8,382
Phillips Petroleum Co.	2	58
Prairie Oil & Gas Co.	13	861
Sinclair Oil & Gas Co.	1	15
Slick and Comar Oil Co.	36	11,873
Southwestern Petroleum Co.	15	610
The Texas Co.	6	37
White Eagle Oil & Ref. Co.	7	151
Total	729	106,619

Tonkawa Deep Sand Production

Amerada Pet. Corp., Goltry	4	9,561
Pennok Oil Co., Endicott	7	7,021
Comar Oil Co., Beverlin	2	3,223
Comar Oil Co., Pettit	3	4,149
Comar Oil Co., L. Endicott	3	5,287
Comar Oil Co., E. Endicott	8	16,741
Comar Oil Co., Gaume	1	917
Gypsy Oil Co., Shawver	6	10,906
T. B. Slick and the Comar Oil Co., Endicott	7	9,612
Blackwell Oil & Gas Co., McDaniel	4	7,797
Wentz Oil Corp., McKee	4	10,000
Total	49	84,639

Daily average pipe line runs from the field were as follows: Kay County Pipe Line Co., 33,945 bbls.; Ozark Pipe Line Co., 20,964 bbls.; Gulf Pipe Line Co., 11,905 bbls.; Champlin Refining Co., 14,092 bbls.; Bolene Refining Co., 3,050 bbls.; Globe Refining o., 3,727 bbls.; Moore Refining Co., 6,095 bbls.; Producers & Refiners Corp., 505 bbls.; Oklahoma Pipe Line Co., 132 bbls.; Empire Pipe Line Co., 2,359 bbls.; Sinclair Pipe Line Co., 6,561 bbls.; Golden Rule Refining Co., 634 bbls.; Cosden Co., 1,133 bbls.; Illinois Refining Co., 1,323 bbls. Storage, 6,226 bbls.

Papoose Operations

The Indian Territory Illuminating Oil Co.'s and Barnsdall Oil Co.'s No. 2 Williams, C SE SE SE, Section 34-10-9, Papoose Pool, Seminole-Okfuskee counties, got sand at 3,305-3,322 feet, with 1,776 bbls. initial production. The Kingwood Oil Co.'s No. 1 Sands, C SE SE SW, Section 35-10-9, got sand at 3,311-3,345 feet, and shot it with 3 and 7 quarts for a 256-bbl. production; No. 3 Sands, C NE SE SW, Section 35-10-9, got a 25-bbl. show at 3,020-3,040 feet, and is drilling at 3,150 feet; has a rig up for No. 7 Sands, C NE SW SW, Section 35-10-9 and building rig for No. 8 Sands, C NE SE SW, Section 35-10-9. The Prairie Oil & Gas Co.'s No. 1 Sawyer, C SW NW SE, Section 35-10-9, sand at 3,315-3,329 feet, good for 3,147 bbls. naturally; No. 2 Sawyer, C SE NW SE, Section 35-10-9, spudding; building rig for No. 3 Sawyer, C NE NE SE, Section 35-10-9.

T. B. Slick's No. 2 Sand, C NW SW SE, Section 35-10-9, got a gas sand at 2,958-2,980 feet, and a 100-bbl. show of oil at 3,040-3,065 feet; now drilling at 3,130 feet. Slick was spudding No. 5 Sands, C NE SW SE, Section 35-10-9; building rig for No. 7 Sands, C NE SE SE, Section 35-10-9, and for No. 8 Sands, C NW SE SE, Section 35-10-9.

The Amerada Petroleum Corp. is rigging up No. 1 Harjo, C SW SW SW, Section 36-10-9; Independent Oil & Gas Co., rigging up No. 1 Bruner, C NW NW NW, Section 1-9-9; also rigging up No. 2 Bruner, C SW NW NW, Section 1-9-9; Josey Oil Co. and Margay Oil Co. No. 1 Arbor, C NW SW NW, Section 1-9-9.

The Independent Oil & Gas Co.'s No. 1 Alexander, C NW NE NE, Section 2-9-9, which started at 2,162 bbls., was later reported as doing 70 bbls. an hour; No. 3 Alexander, C SE NE NE, Section 2-9-9, is a rig; No. 4 Alexander, C SW NE NE, Section 2-9-9, is rigged up. Cosden Oil & Gas Co.'s No. 8 Alexander, C NW SW NW, Section 3-9-9, got 12,000,000 feet of gas with oil spraying at 3,289-3,314 feet, and was drilling at 3,314 feet; No. 10 Alexander, C NW

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NW NW, Section 3-9-9, spudding in; T. B. Slick's No. 2 Grayson, C NW SE NE, Section 3-9-9, drilling at 500 feet. No. 2 Grayson, C NE NE NE, Section 3-9-9, was flowing 1,960 bbls. from 3,307-3,319 feet. Skelly Oil Co. was spudding in No. 2 Carter, C NE SW NW, Section 4-9-9; Mid-Kansas Oil & Gas Co.'s No. 2 Bruner, C NW SW NE, Section 9-9-11, rig on ground.

T. B. Slick's No. 2 Ryan, C SE NE NW, Section 2-9-9, got sand at 3,327 feet, and was drilling at 3,337 feet, making 65 bbls. an hour.

In the Cromwell Field

In the Cromwell Field in Seminole County. The Empire Gas & Fuel Co.'s No. 8 Dunn, C W half SW NE SE, Section 4-0-8, found the Cromwell sand at 3,354 feet, and drilled to 3,416 feet. The well, together with No. 7 Dunn, was making 3,470 bbls. No. 8 Dunn was flowing 80 bbls. an hour at the end of last week. No. 1 Dunn, C SE SW SE, Section 4-10-8, was making 80 bbls. an hour from between 3,372 and 3,426 feet. The top of the sand was found at 3,353 feet.

The Sinclair Oil & Gas Co.'s No. 1 Clark, C SW NW NE, Section 4-10-8, got the Cromwell at 3,365 feet, and drilled to 3,434 feet; producing 2,000 bbls. naturally.

The Tidal-Osage Oil Co.'s No. 1 Baker, C NW SE NE, Section 8-10-8, topped sand at 3,450 feet, and was making 15 bbls. an hour, drilling at 3,464 feet. The Pure Oil Co.'s No. 10 Bunner, C NW NE SE, Section 9-10-8, was getting 67 bbls. naturally from sand at 3,357-3,440 feet. The Sinclair Oil & Gas Co. and Transcontinental Oil Co.'s No. 7 Bruner, C SW NW SW, Section 9-10-8, got sand at 3,435-3,472 feet, and drilled to 3,492 feet; making 1,200 bbls. naturally.

The Sinclair Oil & Gas Co.'s No. 2 Hill, C NE NE NE, Section 9-10-8, was getting 40,000,000 feet of gas from a sand at 3,307-3,400 feet. The well was shut down to let the gas exhaust.

The Carter Oil Co.'s No. 4 Brown, C NE NE SW, Section 10-10-8, got 5,000,000 feet of gas and a show of oil in sand topped at 3,356 feet, and was drilling at 3,450 feet. No. 1 Hill, C NW NW NW, Section 10-10-8, got sand at 3,311-3,462 feet, and drilled to 3,469 feet, making 30,000,000 feet of gas and 40 bbls. of oil naturally.

The Pure Oil Co.'s No. 7 Bruner, SE cor. NE SE, Section 9-10-8, got the top of the Cromwell sand at 3,390 feet, with the first oil at 3,437 feet; the bottom of the sand was reached at a depth of 3,484 feet, when it was given a 60-quart shot. The first 24 hours it produced 280 bbls., and then dropped down to only 70 bbls. the second 24 hours.

The Houston Oil Co. has a rig up for No. 3 Harjo, C NW NE SE, Section 15-10-8; Roxana Petroleum Corp. is spudding in No. 3 Proctor, C NW NE SW, Section 16-10-8; Cosden Oil & Gas Co. building a rig for No. 3 Bruner, NE cor. SE NE, Section 17-10-8; Powers Petroleum Co. abandoned the rig on No. 1 Scott, C NE NE NE, Section 18-10-8.

The Tidal-Osage Oil Co. drilling at 920 feet in No. 1 Baker, C SW SW, Section 3-9-11.

The Tidal Oil Co.'s No. 1 Replogle, NW cor. SW SE, Section 8-10-8, was reported to be making 20 bbls. an hour and 8,000,000 feet of gas from sand at 3,409-3,454 feet.

The Roxana Petroleum Corp.'s No. 5 Yarhola, C NW NE SW, Section 3-10-8, was drilling at 260 feet; Cosden Oil & Gas Co. is building a rig on No. 9 Toney, C SW NW SW, Section 4-10-8; building rig for No. 10 Toney. C NW SW SW, Section 4-10-8; spudding No. 13 Toney, C SW SE SW, Section 4-10-8; Sinclair Oil & Gas Co. had rigs on the ground for No. 5 Clark, C NW NW NE, Section 4-10-8; No. 6 Clark, C NE NW NE, Section 4-10-8, No. 7 Clark, C NW NE NE, Section 4-10-8, No. 8 Clark, C NE NE NE, Section 4-10-8, rig on ground.

The Southwestern Petroleum has rigs up for No. 3 Jackson, C NE SE NW, Section 4-10-8; No. 4 Jackson, C SE NE NW, Section 4-10-8 and No. 5 Jackson, C NE NE NW, Section 4-10-8. Its No. 4 Wisner, C SE SE NE, Section 4-10-8, was drilling at 300 feet. Rigs were up for No. 5 Wisner, C NE SE NE, Section 4-10-8, No. 6 Wisner, C NW SE NE, Section 4-10-8, and No. 7 Wisner, C NE SW NE, No. 8 Wisner, C NW SW NE, was drilling at 375 feet. Waite Phillips Co.'s No. 8 Dunn, C NE NE SE, Section 4-10-8, was drilling at 350 feet. No. 2 Hill, C SW NW NW, Section 10-10-8, topped sand at 3,285 feet, was drilling at 3,392 feet, making 15 bbls. No. 1 Little, C NW SW NE, Section 10-10-8, got sand at 3,340 feet and lost the tools in the hole at 3,492 feet. It had a production of 40,000,000 feet of gas, shut in.

The Cosden Oil & Gas Co.'s No. 1 Toney, C NE NW NW, Section 4-10-8, the south offset to the Laurel Oil & Gas Co.'s No. 1 Fixico, made 260 bbls. in 15 hours from 3,406-3,414 feet. This is considerably better than the initial production of the Laurel well.

Deep Dry Holes in 11-11

The Atlantic Oil Producing Co. shut in 4,000,000 feet of gas in its No. 3 Fisher, CSL NW SE, Section 36-12-10, Okfuskee County. The sand was found at 804,812 feet. The Tidal Oil Co.'s No. 2 Hawkins, NW NW NE, Section 3-11-11, was dry and abandoned at a depth of 2,892 feet. Hartman and others' No. 1 Sears, NE cor. Section 5-11-11, topped sand at 2,889 feet, and at 1 foot in the hole had a good show of oil. The Lyons Petroleum Co. and M. C. French will plug their Wilcox test, No. 5 Ingram, NE cor. SE SW, Section 13-11-11. They got the top of the sand at 3,510 feet with water, and drilled in the water sand to 3,650 feet.

Atlantic Oil Producing Co. is spudding in No. 1 Gray, C NW SW SE, Section 36-12-10. No. 2 Fisher, C SE NW SE, Section 36-12-10, is also spudding in; McMahon and the Atlantic Oil Producing Co. are rigging up No. 2 Brook, C NE SE SW, Section 36-12-8. The Eastern Oil Co. is rigging up No. 7 Berry, W half NE SW, Section 25-13-11. Josey Oil Co. got 2,000,000 feet of gas and a show of oil at 2,876-2,900 feet in No. 1 Hulsey, SE cor. SE NE, Section 32-12-11. No. 1 Fields, SE cor. NE NE, Section 31-12-11, mudded off 10,000,000 feet of gas in sand at 2,670-2,705 feet, and is drilling at 2,715 feet. No. 1 Hawkins, C NW NW SE, Section 33-12-11, got 10,000,000 feet of gas at 3,031-3,036 feet, and is held up with casing trouble. Angle-Texas Oil Co. is rigging up No. 1 Skelton, SW cor. SE SE, Section 33-12-11.

In Hughes County

The Roxana Petroleum Corp.'s No. 1 Chupco, C SW SE SW, Section 1-8-6, Hughes County, topped sand at 3,429 feet and got oil at 3,439 feet. The well was drilled to 3,949 feet, and was good for 12 bbls. an hour and 40,000,000 feet of gas. The Dixie Oil Co.'s No. 1 Walker, SW cor. NE NW, Section 32-8-8, was dry and abandoned at 3,142 feet. This is an old well drilled deeper. No. 2 Buchner, C NE NW NW, Section 12-8-8, got the top of the lime at 3,420 feet, top of sand at 3,425 feet and was drilling at 3,434 feet. The well made three small flows.

Burk & Greis are building a rig, C SE SE SE, Section 24-9-8. The Magnolia Petroleum Co.'s No. 3 Logan, C NW SE SE, Section 25-8-7, is drilling at 100 feet. Boggs & Sykes' No. 2 Willia, NE cor. Section 31-8-8, topped sand at 3,240 feet, and was drilling at 3,247 feet with 1,000 feet of oil in the hole. The Dixie Oil Co. drilled No. 1 Walker to 3,142 feet, where it was abandoned as dry. The Magnolia Petroleum Co. is rigging up No. 1 Manley, C NW SE NW, Section 23-7-8. Walton & Sneider have a rig on the ground for No. 1 May Kite, C E half NE NW, Section 8-6-10.

Developments in Creek County

Olean Petroleum Co.'s No. 2 Soldier, NW cor. SE, Section 5-16-8, Creek County, is getting 17,000,000 feet of gas from sand at 2,787-2,843 feet. This is an old well drilling deeper.

The Prairie Oil & Gas Co.'s No. 3 Pitman, NW cor. SW NW, Section 5-16-8, picked up the Dutcher sand at 3,248-3,264 feet for a 15-bbl. show; the well was drilled to 3,301 feet and is being cleaned out. This is an old well drilled deeper.

The Olean Petroleum Co. is drilling at 300 feet in No. 6 Washington, NE cor. SW SW, Section 32-17-8. No. 8 Washington, NW cor. SE SW, Section 32-17-8, is being rigged up; Sartain Brothers are drilling at 2,475 feet in No. 1 Antussee, SE cor. SW NW, Section 32-17-8; Eastern Oil Co. No. 5 Roberts, SE cor. SE NE, Section 17-15-8, rig abandoned; Empire Gas & Fuel Co.'s No. 1 Benjamin, SW cor. NW SW, Section 30-15-8, building rig; Shaffer Oil & Refining Co.'s No. 1 Benjamin, SW cor. SW NE, Section 17-14-8, fishing at 3,912 feet with 2,000 feet oil in hole from sand at 3,366-3,376 feet.

Billingslea's No. 2 Fields, NW cor. SW SE, Section 30-15-9, made 586 bbls. the first 24 hours from sand at 3,021-3,026 feet. Billingslea and Skelly Oil Co.'s No. 1 Fields, NE cor. SE SW, Section 30-15-9, was rigging up; C. G. Tibbens' No. 4 Fields, SE cor. NE SW, Section 30-15-9, rigging up, twin well; No. 5 Fields, SW cor. NE SW, Section 30-15-9, spudding; Cumberland Petroleum Co.'s No. 2 Friday, C NW SE SW, Section 22-15-10, rigging up.

Billingslea's No. 1 Micco, E half NE NE, Section 28-14-9, swabbed 145 bbls. from 3,116-3,116½ feet. The crew was fishing for the swab. The Atlantic Oil Producing Co.'s No. 1 McNevins, C NW SW SE, Section 17-14-10, was good for 100 bbls. from 3,445-3,447 feet. The big pipe was being pulled; Donnely & Hall's No. 1 Peters, Section 17-14-10, is pumping 32 bbls. from sand at 2,878-2,880 feet, total depth 2,909 feet.

H. C. Wilson's No. 2 Bucktrot, W half NW NW, Section 35-17-10, got a gas sand at 2,308-2,330 feet, drilled to 2,890 feet, plugged back to 2,330 feet, and got a 500,000-foot gas production after a 3-quart shot. It is an old well drilled deeper.

One well was brought in at Mounds this week, one dry hole reported, and two new wells started. Sheldon Oil Co. and others' No. 2 Vore, NE cor. SE NW, Section 34-16-12, was making 300 bbls. from sand at 2,173-2,180 feet naturally. Tague & Lebow's No. 1, Lot 4, Block 39, in the C W half SW SW SE, Section 8-16-12, was dry and abandoned at 2,375 feet; Suppese and others were rigging up a machine at No. 4 Marshall, NW cor. SE NW SW, Section 8-16-12; Foster and others are rigging up tools to drill No. 1 on Lot 6, Block 20, in the N half NW SE SW, Section 8-16-12.

Recent Burbank Completions

In the Burbank Field, Osage County, the Carter Oil Co.'s No. 11 St. John, C NW NW, Section 11-27-5, found top of the sand at 2,985 feet, and got the first oil at 3,002 feet, total depth 3,047 feet; a 100-quart shot between 2,994 and 3,045 feet brought a production of 547 bbls. the first 18 hours. No. 14, N half NW SE NW, Section 11-27-5, got sand at 2,950 feet, gas at 2,968 feet, and oil at 2,973 feet; total depth 3,031 feet, and made 120 bbls. the first 15 hours. No. 16, E half SE NE NW, Section 11-27-5, got sand at 2,975 feet, gas at 2,985 feet, and now making 975 bbls. naturally from 2,994-3,025 feet.

The Phillips Petroleum Co.'s No. 11, C SW NE SE, Section 11-27-5, sand at 3,004 feet, with gas, oil at 3,014 feet, now making 250 bbls. naturally from total depth of 3,047 feet. No. 14 shot with 90 quarts between 2,995 and 3,031 feet, and made 250 bbls.; total depth 3,036 feet.

The Carter Oil Co.'s No. 15, C NE NE NW, Section 11-27-5, got sand at 2,977 feet, with gas at 2,994 feet, and the first oil at 3,000 feet. At 3,040 feet it had 2,500 feet of oil in the hole.

The importance of the above mentioned wells in Section 11, lies in the fact that the leases offset Tracts 181 and 182, which will be offered for sale at the Osage lease sale on December 18.

The Carter Oil Co.'s No. 9, C E half SW NW NW, Section 13-27-5, Burbank Field, reached the top of sand at 3,039 feet and got the first oil at 2,986 feet, gas at 3,015 feet and bottom sand at 3,039 feet; total depth 3,042 feet; shot with 120 quarts at 2,976-3,037 feet, the well was then good for 20 bbls. on the pump.

(Continued on Page 68)

Kansas Oil Field News

By C. D. Lockwood

The National Refining Co.'s well No. 1 Warner, NW cor. SE NE, Section 17-21-4, Marion County, Kansas, 16 miles south of the town of Marion, on the east side of the Covert-Sellers Pool, found sand at 2,439 feet, and with the bit only 2 feet in the sand, was flowing 300 bbls. a day.

The Graham Pool, in Cowley County, is also attracting interest. The Marland Refining Co.'s No. 2 Graham, SE cor. NE NE, Section 9-33-3, got sand at 2,558 feet, and was drilled to 2,564 feet. The well was shot with 10 quarts on Friday, and with 36 quarts on Saturday, which brought a production of 255 bbls. the first 24 hours after the second shot. No. 3 Graham, SE cor. NE, Section 9-33-3, got sand at 2,564-74 feet, and swabbed 170 bbls. The same company's No. 2 Wright, SW cor. NW NW, Section 10-33-3, was making 196 bbls. after a 10 and 30-quart shot at 2,550-67 feet.

The Arkansas Fuel Oil Co.'s wildcat, No. 1 Sherwood, NW cor. Section 14-31-4, 7 miles north and 1 mile east of Winfield, had a hole full of water from a sand at 3,509-11 feet.

Cowley County Operations

The Alcorn Oil Co. got oil in sand between 2,257 and 2,268 feet in its wildcat No. 1 Dunbar, NE cor. NE SW, Section 29-30-5, Cowley County, and drilled to 3,380 feet. The hole was plugged back to 2,270 feet and shot with 40 quarts for a production of 10 to 15 bbls. It is being cleaned out. The Lewis Oil Co.'s No. 1 Gibbs, SW cor. SW SE, Section 30-30-6, got 2,000,000 feet of gas from 2,869 to 2,872 feet, and was drilling at 2,928 feet. The Ohio Fuel Co.'s No. 3 Burge, C NE SE, Section 4-30-8, got 3,000,000 feet of gas at 1,727-1,727 feet. The Watchorn Oil & Gas Co.'s No. 2 Denton, C NE NE, Section 3-30-9, found sand at 2,251-77 feet and did 25 bbls. after a 40-quart shot. The Marland Refining Co.'s No. 2 Wright, SW cor. NW NW, Section 10-33-3, was swabbing 300 bbls. from sand at 2,560-67 feet; No. 1 Spruens, NW cor. NW SW, Section 10-33-3, was swabbing 150 bbls. from sand at 2,557-2,580 feet. The Waite Phillips Co. and others' No. 1 True, NE cor. NW Section 29-33-3, was dry and abandoned at 3,190 feet. This cuts off the Rainbow Bend Pool to the south.

The J. A. Hull Oil Co. deepened its No. 7 Kukuk, SW cor. SW NE, Section 24-34-4, the famous "Emerald gusher," which originally made 50 bbls. an hour from oil pay at 3,019-35 feet. The well was completed at 3,041 feet, and was producing 675 bbls. of oil and 9,000,000 feet of gas.

The J. A. Hull Oil Co.'s No. 8 Wallace, NW cor. NW SE, Section 24-32-4, got a broken sand at 2,983-3,000 feet, sand at 3,000-3,050 feet, then lime at 3,095 feet. The well was plugged back to 3,065 feet and shot with 10 and 17 quarts and flowed 305 bbls. the first 17 hours after the shot. This was an old well drilled deeper.

The J. A. Hull Oil Co. is building a rig for No. 9 Kukuk, NW cor. SW NE, Section 24-32-4 and for No. 10 Kukuk, SW cor. NW NE, Section 24-32-4; also for No. 11 Kukuk, NW cor. NW NE, Section 24-32-4. Charles Dye is drilling at 1,090 feet in No. 1 on the County Farm, C NE NE SW, Section 34-32-4.

Northeast of Arkansas City, Kans., the Marland Refining Co. has a rig on the ground for No. 1 Millick, SE cor. SE NW, Section 14-34-4, and is building the rig for No. 1 Lindsay, SE cor. SE NW, Section 22-34-2; also for No. 1 Warner, NW cor. SW SE, Section 23-

(Continued on Page 146.)

North Louisiana-Arkansas

By M. L. Vaughn

Slight increase in North Louisiana more than offset by decreases in Arkansas. Carbon industries reported to be interested in merger in Monroe Field. New development in progress in north end of Louann-Smackover district. Marked activity in Cotton Valley follows completion of recent wells there.

SHREVEPORT, La., Dec. 8.—Slight increases in production in several north Louisiana districts during the past week brought the daily average up to 5,475 bbls., an increase of 870 bbls. a day. This was more than offset by a marked decline in Arkansas production where the daily average was 111,600 bbls., a decrease of 1,990 bbls. a day. Despite the steadily increasing number of producing wells in the Cotton Valley district, production from that district showed a slight decline last week, the average runs amounting to 9,945 bbls. a day. Smackover, both light and heavy, and El Dorado showed a decline in production, the only increase in the Arkansas field being in the Nevada County district. Production from the combined Arkansas and Louisiana fields averaged 168,075 bbls. a day, distributed as follows:

North Louisiana	
Bellevue	4,405
Caddo light	9,860
Caddy heavy	2,345
Cotton Valley	9,945
De Soto and Red River	4,745
Elm Grove	585
Haynesville	16,425
Homer	7,165
Total	56,475
South Arkansas	
El Dorado	10,690
Nevada County	1,465
Smackover light	30,665
Smackover heavy	66,670
Stephens	2,110
Total	111,600
Total both fields	168,075
Decrease	1,990

Rumored Carbon Merger

Work on the Couch electric power plant, one of the largest power plants in the world, at Sterlington, La., has been delayed during the past few weeks by a big gas blowout where they were excavating for the buildings. The gas is coming from surface sands and will not prove difficult to control. A temporary plant is being constructed to provide the electricity for power and light for work on the main plant and as soon as the temporary plant is completed this work will be pushed rapidly, using night and day shifts with electric lighting for work at night.

Preliminary steps were taken at a public meeting at West Monroe last week, providing for the sale of the electric light plant owned by that city to the Couch interests. It is believed that better service, particularly from a power standpoint, will result from private ownership of the plant and it is expected with the completion of the big power plant at Sterlington, industrial conditions in the vicinity of the Monroe gas field will be revolutionized.

Leading officials of the carbon industries operating in the Monroe gas field are meeting in New York to talk over future policies. Cards will be laid on the table and a careful study of the situation made with a view to harmonizing the points now at issue with the conservation commission, particularly as to a lessening of the gas consumption in the manufacture of carbon black. Rumors of a big merger of carbon companies are also current.

Lion Well Comes Back

Increased drilling activity is reflected in the number of completions made in the Union County area of the Smackover Field during the past week, the completion of most importance being that of the Lion Oil & Refining Co. on the Graves lease in Section 3-16-15, the outcome of which was somewhat in doubt for several days after its completion. When first completed, the Graves well went dead after flowing for one hour at the rate of 3,000 bbls. a day, but came back again and is now flowing 2,500 bbls. a day of which, however, it is estimated 95 per cent is salt water. Despite the water in the well, this completion marks a new era in the development of this territory as it is the first oil producer obtained from the 2,300-foot sand, all previous wells at this depth proving gas only. The completion has already been followed by a number of new wells in its vicinity and many dead wells or failures are being drilled deeper. The well is located in Section 3-16-15, between Norphlet and Smackover, and practically connects the two pools.

The Amerada Petroleum Corp. junked the hole at 1,500 feet in its Galloway, Section 4-16-15, and the test has been abandoned.

In the El Dorado East Field, the Imperial Oil Co. completed No. 3 Smith, Section 29-17-14, pumping 180 bbls. at 2,223 feet, and in the east end of the Smackover Field the Traffic Oil Co. drilled to 3,026 feet in a test on the Goodwin lease in Section 20-16-14, and the well has been abandoned.

The Coker Drilling Co. has abandoned its No. 1 Thornton in Section 14-16-16 at 1,985 feet.

Rutledge and others completed No. 3 Meek in Section 6-16-16 in the Louann district, pumping 130 bbls. at 2,260 feet.

In the Norphlet district, Nye Wilson completed No. 3 Hays in Section 4-16-15, making a 200-bbl. pumper at 1,970 feet.

In the same section as the Lion Oil Co.'s Graves well, the Texas Co. completed No. 5 Alphin, making 20,000,000 feet of gas at 2,320 feet.

Ouachita County

Completions in the northern area of the Smackover Field numbered only three during the past week, of which two were producers and one a failure.

Burton, trustee, completed No. 10 Hughes in Section 28-15-16, making a 100-bbl. pumper at 2,295 feet.

Finley and others have abandoned their test on the Keller lease in Section 25-15-17, at 2,100 feet.

McCorkle and others completed No. 2 Smith in Section 25-15-17, flowing 25 bbls. at 2,295 feet.

Stephens Field

Morgan & Gaughan tested dry at 2,263 feet in their test on the Morgan lease in Section 3-15-19, but may skid over and make a shallow test at 1,238 feet, where they had a promising looking sand.

Hickman and others abandoned No. 2 Smart, Section 13-15-20, at 2,039 feet.

Webster Parish

Completions in the Cotton Valley district during the past week numbered five, all producers, including one gas well and four oil wells with an aggregate initial production of 440 bbls.

The Fortuna Oil Co. completed No. 1 W. Cox in Section 15-21-10, flowing by heads at the rate of 150 bbls. a day, at 2,540 feet, and No. 4 L. Merritt, Section 14-21-10, making a 35-bbl. pumper at 2,545 feet.

The Humble Oil & Refining Co. completed Bodcau B-2, Section 24-21-10, pumping 155 bbls. at 2,520 feet.

The Louisiana Oil Refining Corp. completed No. 1 Nelson in Section 28-21-10, making 20,000,000 feet of gas with a spray of oil at 2,667 feet.

The Ohio Oil Co.'s No. 8 Bodcau, Section 15-21-10, made a 100-bbl. pumper at 2,534 feet.

Bossier Parish

In the north end of Bossier Parish, Estes and others opened up their well on the Bodcau Lumber Co. land in Section 15-23-12, and it is pumping at the rate of 15 bbls. a day with considerable salt water. A number of tests in this territory have resulted in temporary producers but they have always proved tricky and development in this district is not yet considered a paying proposition.

Caddo Parish

In the Pine Island district, The Texas Co. tested dry and has abandoned Hobbs A-6, Section 28-21-15, at 1,965 feet.

Ashley County, Arkansas

Spoonse and others drilled to 400 feet in a test on fee land in Section 4-16-17, and have abandoned the well at this depth.

Hempstead County, Arkansas

The Fullilove Drilling Co. tested dry at 2,520 feet in No. 1 Ford, Section 31-14-23, and the test has been abandoned. The test is located 8 mile northeast of Lewisville and 13 miles southeast of Hope.

Union County Drilling

The effect of the unexpected production found in the 2,300-foot sand in the south end of the Smackover district, where all previous completions at this depth have been gassers, has been an appreciable increase in drilling activity, particularly in the neighborhood of the new producer.

Among the new wells which have been started in this vicinity, the Arkrado Oil Co. has derrick up for No. 5 Hatfield in Section 7-16-15; Howell and others are rigging up to drill No. 1 Williams in Section 3-16-15, and the Standard Oil Co. of Louisiana has derrick up for No. 9 J. H. Alphin, Section 3-16-15, and has set 10-inch casing at 125 feet in No. 5 H. H. Alphin, Section 11-16-15.

The Gulf Refining Co. is arranging to deepen No. 18 L. Werner, Section 5-16-16, completed in June a 15-bbl. pumper at 2,260 feet; is drilling at 1,550 feet in No. 25 L. Werner, Section 5-16-16, and 1,855 feet in No. 26 L. Werner, Section 6-16-16, and has set 6-inch casing at 1,855 feet in No. 9 M. Alphin, Section 2-16-15, and at 1,870 feet in No. 1 H. Murphy in the same section.

The Arkansas Fuel Oil Co. has set 6-inch casing at 2,250 feet in No. 5 La Grone, Section 1-16-17; the Arkansas Invincible Oil Co.'s No. 1 Patterson, Section 12-16-17 is shut down for gas at 2,245 feet; Baggott and others have 300 feet of oil in the hole in No. 1 Clark, Section 21-16-15, and are arranging to pump at 2,070 feet and the Cherokee Petroleum Co. is setting line to test 7 feet of sand at 2,032 feet in No. 7 Burton, Section 25-16-16.

Beery and others are drilling at 1,450 feet in No. 1 Union Sawmill Co., Section 14-19-11 a wildcat test 28 miles southeast of El Dorado.

H. E. Clark has 300 feet of oil in the hole at 2,260 feet in No. 2 Neely, Section 1-16-17, and is arranging to pump; J. W. Clark is arranging to pump No. 1 Palmer, Section 9-16-15, at 2,100 feet, and Crawford & Sebastian have set 6-inch casing at 1,930 feet in No. 3 Giller, Section 14-16-15.

Estes and others have set 6-inch casing at 2,233 feet in No. 4 Freeman, Section 1-16-17; the Federal Petroleum Co. is drilling at 2,730 feet in No. 1 Childs, Section 8-16-16 and the Higgins Oil & Refining Co. is arranging to pump Murphy A-4, Section 14-16-15, at 1,990 feet.

E. M. Jones is drilling at 2,857 feet in a deep test on the Murphy lease in Section 26-16-16; W. W. Jones and others have derrick up for No. 1 G. F. Murphy in Section 18-16-15, and Kinnebrew and others are arranging to test 40 feet of broken sand at 1,990 feet in No. 4 Williams, Section 3-16-15.

The Magnolia Petroleum Co. has 900 feet of oil in the hole in No. 2 Goodwin-Campbell, Section 13-16-17, and is arranging to pump at 2,370 feet, and 800 feet of oil in No. 1 Smith, Section 2-16-17 and is arranging to pump at 2,258 feet.

The Natural Gas & Petroleum Co.'s test on the Frazier lease in Section 1-18-14, stands within 200 feet of the top in salt water and they have set 4½-inch casing with packer to test at 2,550 feet. Myerscough and others are drilling at 1,900 feet in No. 3 Smith, Section 28-17-14.

P. F. O'Brien and others lost the hole at 1,506 feet in their wildcat test, No. 1 fee, Section 13-19-17, and they will move over 100 feet and start another hole.

The Penguin Oil Co. is drilling at 1,850 feet in No. 3 Berry, Section 18-16-15; the Phillips Petroleum Co. at 1,025 feet in No. 1 Hearin, Section 13-16-16, and the Pure Oil Co. has set 12½-inch casing at 65 feet in No. 1 C. Hicks, Section 20-16-15, and at 62 feet in No. 1 Lawton, Section 30-16-13.

Rogers and others are drilling at 1,900 feet in No. 2 Le Croy, Section 17-16-15; the Simms Oil Co. at 2,435 feet in No. 1 Laney Heirs, Section 8-16-16; Sutherland and others have set 10-inch casing at 63 feet in No. 4 Neely, Section 1-16-17, and the Terry Summerfield Oil Co. has set 6-inch casing at 2,180 feet in No. 6 Smith, Section 29-17-14.

The Sunny Jim Oil Co. is rigging up to drill No. 2 Flenniken in Section 9-16-15; The Texas Co. has set 4½-inch casing at 2,600 feet in No. 1 McAdoo, Section 15-16-16, and Weatherbee and others are having trouble with gas and salt water where their 6-inch parted 140 feet down in No. 3 Rice, Section 6-16-16. The well is down 2,225 feet.

Ouachita County, Arkansas

Considerable new development is in progress in the north end of the Louann-Smackover district, where the two pools have been practically connected and the last of the intervening territory is now being drilled up. The British Allied Estate is rigging up for an interesting test on the Lampkin fee lease in Section 6-13-18, 10 miles northwest of Camden.

Bray-Hawthorne tested dry, with a show of oil and gas at 2,538 feet in No. 1 Copenhaven, Section 13-15-17, and are drilling deeper at 2,567 feet. Their No. 1 Goodwin in Section 12-15-17, has set 12-inch casing at 62 feet.

H. E. Clark is rigging up to drill No. 2 Smith in Section 26-15-17, and is arranging to test 12 feet of sand at 2,340 feet in No. 1 Yarbrough, Section 26-15-17. Ellis & Dumas have set 6-inch casing at 2,205 feet in No. 1 Forest City Box Co., Section 31-15-16, and the Forest Oil Co. is rigging up to drill No. 2 J. A. Cramer in Section 27-15-16, and is arranging to drill No. 12 Cramer deeper in the same section.

Galloway and others have set 10-inch casing at 62 feet in No. 2 Hughes, Section 28-15-16; the Gulf Refining Co. is rigging up to drill No. 1 Reynolds in Section 23-15-17; Hunt and others tested salt water with a little oil at 2,306 feet in No. A-3 Anderson, Section 23-15-17, and has set 10-inch casing at 66 feet in No. B-6 Anderson in the same section and 6-inch at 2,290 feet in No. 1 Myatt, Section 22-15-17.

Hurley and others have 400 feet of

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NW, Section 4-10-8 and No. 5 Jackson, C NE NE NW, Section 4-10-8. Its No.

The Watchorn Oil & Gas Co.'s No. 2 Denton, C NE NE, Section 3-30-9, found

Warner, NW cor. SW SE, Section 23-

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pump.

(Continued on Page 68)

North-Central Texas Field

By Dan F. Dugan

Big Lake Oil Co.'s No. 13 University, making 3,350 bbls., second largest producer in Reagan County. Gwynn and others' No. 2 Rogers, South Archer district, estimated 400 bbls. Bridwell and others' No. 4 Stephens, South Vernon Pool, reported flowing 1,000 bbls., not fully completed.

FORT WORTH, Tex., Dec. 6.—The gradual gain in production in the North Central Texas oil fields which has been noticeable for the past three weeks was checked this week and the fields suffered a decline in average daily output. Total daily production for this week is 132,865 bbls. compared with a total of 135,890 bbls. for the previous week, giving a loss for the week of 3,025 bbls.

The heaviest loss was in the Iowa Park district which includes Archer County. This division of the fields lost a total of 2,050 bbls. in average daily runs, practically all in the runs from Archer County. Production in this field is now 44,215 bbls. daily compared with production of a week ago of 46,265 bbls. daily. The Burkburnett Field also suffered a loss in production as did both Stephens and Eastland Counties. Burkburnett had a decline of 850 bbls. daily, while Stephens County lost 270 bbls. daily and Eastland County lost 135 bbls.

The Electra Field showed a gain of 200 bbls. daily and there was a gain in the wildcat districts of 80 bbls. daily. Some of the principal so-called wildcat fields suffered declines but these losses were more than offset by the increase in some of the other wildcat areas, particularly in Reagan County, where there was a gain of 470 bbls. daily.

Gain in Completions

There was a substantial gain in the number of completions in the fields. Completions total 58 compared with total completions the previous week of 46. Of this week's 58 completions 40 were oil producers, 2 were gas wells and 16 were dry holes. Last week's completions were 21 oil producers, no gas wells and 25 dry holes. New production this week from 40 oil wells totaled 8,375 bbls. compared with new production the previous week of 2,627 bbls. from 21 oil wells. The average flush per new well this week is slightly more than 209 bbls., the average being raised considerably through the completion of the Big Lake Oil Co.'s No. 13 University in Reagan County for a flush output of 3,350 bbls. daily.

As usual Archer County accounted for the largest number of completions, 28 in all, of which number 22 were oil wells and six were dry holes. Last week Archer County had 24 completions, 13 oil wells and 11 dry holes. New production from the 22 new oil wells in this county for the present week was 4,000 bbls. an average per new well of a little more than 181 bbls.

Wichita County had only seven completions this week, six of which, however, were oil wells, there being only one dry hole completed. The six new oil wells had flush production totaling 295 bbls. Young County reported two completions, both dry holes, while Stephens County reported two, one an oil well making 25 bbls., and the other a dry hole. Eastland County contributed six completions, four oil producers, one gas well and one dry hole. The four oil wells had a total new production of 90 bbls., while the gas well had a daily flow of 1,500,000 feet of gas.

New University Well

The wildcat districts accounted for 13 completions, seven oil producers, one gas well and five dry holes. The largest completion in the wildcat territory was the Big Lake Oil Co.'s No. 13 University in Reagan County with a flush of 3,350 bbls. The wildcat gasser was the Prewitt and others' No. 1 Windham in Callahan County, which is making 3,000,000 feet of gas daily from sand at 1,435 feet.

The south Archer County district and the Vernon district in Wilbarger County continue to be the most active spots in the North Central Texas Fields. There are a number of near completions in the South Archer district late in the week reported looking very favorable.

Gwynn and others' No. 2 Rogers in this pool is a near completion and is reported to be making about 400 bbls. from the sand at 1,270 feet. No. 1 Rogers of the same operators is also a late completion. The Panhandle Refining Co.'s No. 2-E Ragle, also in this pool is near ing completion. Late reports were that this well was flowing about 300 bbls. from the sand at regulation depth of 1,085 to 1,095 feet.

Murchison and others' No. 3-G Harmel, also in south Archer is reported a late producer, though not listed as a completion. The well is reported making around 150 bbls. at a total depth of 1,285 feet. This company's No. 1 well on the Campbell lease, north Young County, adjoining Archer, is also reported showing for production and drilling in, but no estimate has been made on the production of the well.

Other Archer County wells showing for producers though not completed are Humphries and others' No. 11 White, estimated to be swabbing 250 bbls. daily from sand at 1,610 feet and Ray and others' No. 5 Hausler, estimated making 250 bbls. a day from sand at 1,135 feet. The Underwood Drilling Co.'s No. 2 Rogers is also making some oil, estimated 25 bbls. at 1,295 feet.

South Vernon Pool

The South Vernon Pool in Wilbarger County is showing some good near completions. The Winnipeg Oil Co.'s No. 3 Bond is reported making around 700 bbls. a day, the pay having been encountered at 2,005 feet. Bridwell and others' No. 4 Stephens is looming up as a big producer, though not fully completed. Late in the week this well was reported flowing 1,000 bbls. daily from sand at the regulation depth of 2,040 feet. Kolp and others' No. 1 Waggoner is also reported showing for a producer. It is making around 175 bbls. from the customary pay depth of 2,025 feet.

By far the largest completion of the week anywhere in the territory was the Big Lake Oil Co.'s No. 13 University in the Reagan County Field. This well, reported last wek as a near completion, is now slated as a 3,350-bbl. producer. This is the second largest producer in the Reagan County district, being surpassed only by the same company's No. 11 University, a half mile to the northeast of No. 13.

Church and others have reported the sale of their property in the Hill and Roberts Pool of Wichita County to the Magnolia Petroleum Co. The property consists of 93 acres out of the Mear and Staniforth and J. A. Watkins fees and has nine producing oil wells. The daily production is approximately 500 bbls.

Montague County is reported getting the attention of some operators. There are reports of several good lease transactions the past two weeks in this county and some new wells have been started and other locations have been made. The Texas Co. has made location on the Salmon farm northeast of Nocona not far from the well of the Texhoma Oil & Refining Co. Lesh and others have started drilling on their well on the Salmon farm and are down around 400 feet.

Wichita County Completions

Magnolia Petroleum Co.'s No. 65 Honaker, 10 bbls., at 1,035 feet; Moores and others' No. 2 Allen & Kemp, dry at 1,745 feet; Rubsom and others' No. 3 McClure, 25 bbls. at 795 feet; The Texas Co.'s No. 296 Waggoner, 15 bbls. at 1,760 feet; Texhoma Oil & Refining Co. and others' No. 5-A Burnett, 140 bbls. at 1,820 feet; Texhoma Oil & Refining Co.'s No. 12-B Burnett, 105 bbls. at 1,825 feet; United Producers Co.'s No. 4 Fouch Jennings, 16 bbls. at 1,585 feet.

Archer County Completions

Carter and others' No. 13-E White, 130 bbls. at 1,615 feet; same company's No. 1-F White, dry at 1,640 feet; Magnolia Petroleum Co.'s No. 7 Parrish, 75 bbls., at 1,595 feet; Oil Investment Co.'s No. 1 fee, 40 bbls. at 1,110 feet; Robertson and others' No. 12 White, 190 bbls. at 1,610 feet; same company's No. 13 White, 175 bbls. at 1,610 feet; same company's No. 21 White, 60 bbls. at 1,615 feet; Archer Oil Corp.'s No. 1 Farmer, 15 bbls. at 1,470 feet; Consolidated Oil Co.'s No. 5 Bearden, 150 bbls. at 1,080 feet; same company's No. 5-A Davis, 160 bbls. at 1,095 feet; same company's No. 3-E Ragle, 250 bbls. at 1,095 feet; Cullum and others' No. 3 Bridwell, 370 bbls. at 1,140 feet; Gwynn and others' No. 1 Rogers, 240 bbls. at 1,280 feet; Goldsmith and others' No. 1 Young, dry at 1,210 feet; Hobbs and others' No. 1 Russell, dry at 1,400 feet; Maer and others' No. 3 Bridwell, 140 bbls. at 1,140 feet; Murchison and others' No. 2 Griffin, 125 bbls. at 1,295 feet; same company's No. 4 Griffin, 120 bbls. at 1,290 feet; Mutual Oil Co.'s No. 1 Harmel, 250 bbls. at 1,275 feet; Producers Petroleum Co.'s No. 1 Bridwell, 350 bbls. at 1,135 feet; same company's No. 4 Rogers, 250 bbls. at 1,278 feet; Ray and others' No. 4 Hausler, 250 bbls. at 1,130 feet; Simms Oil Co.'s No. 1 Farmer, dry at 1,650 feet; Texhoma Oil & Refining Co.'s No. 5 Hausler, 200 bbls. at 1,145 feet; same company's No. 7 Hausler, 300 bbls. at 1,130 feet; Lee Wilson and others' No. 3 Bearden, dry at 1,100 feet; same company's No. 5 Bearden, dry at 1,130 feet; same company's No. 6 Bearden, 360 bbls. at 1,085 feet.

Young County Completions

Harvey and others' No. 1 Hill, dry at 1.150 feet; Texas Central Oil Co.'s No. 1 Tagg, dry at 1,600 feet.

Stephens County Completions

Christie Brothers' No. 4 Humphreys, 25 bbls. at 2,180 feet; Humble Oil & Refining Co.'s No. 1 O'Laughlin, dry at 3,835 feet.

Eastland County Completions

Mid-Kansas Oil & Gas Co.'s No. 6 Harrell, Acct. 2, dry at 2,570 feet; Pittman and others' No. 2 Ford, 10 bbls. at 1,470 feet; same company's No. 1 McMinn, 35 bbls. at 1,480 feet; Teatsworth and others' No. 1 Scott, 10 bbls. at 1,485 feet; Keough Brothers' No. 10 Gooch, 35 bbls. at 2,515 feet; Mexia Star Oil Co.'s No. 1 Judd, 1,500,000 feet of gas at 2,530 feet.

Wildcat Completions

Carson County—The Texas Co.'s No. 4 Burnett, 60 bbls. at 3,008 feet.

Wilbarger County—Bridwell and others' No. 1 Dill, 430 bbls. at 2,065 feet.

Throckmorton County—Shamrock Oil Co.'s No. 1 McKnight, dry at 3,300 feet.

Borden County—Reeves and others No. 1 Long, dry at 3,200 feet.

Callahan County—Blair and others' No. 5 Cathey, dry at 1,785 feet; Prewitt and others' No. 1 White, dry at 2,240 feet; same company's No. 1 Windham, 3,000,000 feet of gas at 1,435 feet.

Brown County—Gully and others' No. 1 Cox, 15 bbls. at 2,435 feet; Moore and others' No. 1 Teston, 40 bbls. at 1,245 feet; Stone and others' No. 1 Gunn, 10 bbls. at 1,205 feet.

Comanche County—Fain and others No. 1 McKeehan, 60 bbls. at 2,825 feet.

Reagan County—Big Lake Oil Co.'s No. 13 University, 3,350 bbls. at 2,950 feet.

Ward County—Trans Pecos Oil Co.'s No. 1 Longnecker, dry at 1,750 feet.

Wichita County Drilling

Magnolia Petroleum Co.'s No. 106 Reilly, drilling at 1,265 feet; same company's No. 41 Beach, drilling at 860 feet; O'Neil and others' No. 1 Doneghy, drilling at 1,000 feet; Pace and others' No. 1 Roller, drilling in rock at 500 feet; Leath-McCarty Oil Co.'s No. 1 Kemp, drilling at 1,500 feet; Burnett Ranch Oil Co.'s No. 9 Burnett, reaming; Elliott and others' No. 2 Elliott, drilling in lime at 1,095 feet; Empire Gas & Fuel Co.'s No. 6 Pierce, drilling in shale at 1,310 feet; Granite Oil & Gas Co.'s No. 7 Fisher, drilling in rock at 500 feet; Hampton and others' No. 1 Fisher, drilling in shale at 1,200 feet; Hawkins and others' No. 1 Watkins, has 500 feet of oil in hole at 1,760 feet; Kruger and others' No. 9 Allen & Kemp, drilling at 900 feet; Magnolia Petroleum Co.'s No. 11 Douglas, underreaming 1,085 feet; same company's No. 40 Rio Bravo, drilling at 1,150 feet; same company's No. 41 Rio Bravo, drilling at 760 feet; same company's No. 4 Pere Waggoner, drilling at 870 feet; same company's No. 8-A Waggoner, drilling in shale at 1,500 feet; same company's No. 4-B Waggoner, drilling at 1,190 feet; O'Neil and others' No. 1 Woodward, drilling in rock at 600 feet; Perkins and others' No. 11 Burnett, drilling at 900 feet; The Texas Co.'s No. 1 K. & K., drilling in shale at 1,800 feet; Texhoma Oil & Refining Co. and others' No. 2-B Burnett, drilling in shale at 1,610 feet; Trimutual Oil & Gas Co.'s No. 7 Ward & Todd, drilling at 1,000 feet.

Archer County Drilling

A. B. C. Oil Co.'s No. 3 Ferguson, oil showing at 1,765 feet; Staley and others' No. 4 K. & K., drilling in shale at 1,500 feet; Carter and others' No. 3-C White, fishing at 1,585 feet; same company's No. 14-E White, drilling in hard rock at 1,625 feet; same company's No. 15-E White, fishing at 1,400 feet; Franklin and others' No. 13 Parrish, underreaming at 1,550 feet; Gohlke and others' No. 1 Wilson, drilling at 300 feet; Haskell and others' No. 1 Moldrom, drilling at 150 feet; Humphries and others' No. 9 White, drilling in rock at 700 feet; same company's No. 11 White, oil showing at 1,597 feet; same company's No. 12 White, underreaming; Jetter and others' No. 2 White, oil showing at 1,585 feet; Lane and others' No. 4 White, oil showing at 1,615 feet; Lincoln and others' No. 2 Oil Investment Co., drilling at 935 feet; Lincoln and others' No. 1 Langford, drilling in hard sand at 1,050 feet; Magnolia Petroleum Co.'s No. 8 Parrish, drilling in shale at 1,590 feet; same company's No. 9 Parrish, drilling in shale at 1,520 feet; same company's No. 11 Parrish, drilling at 1,130 feet; Mahlstedt and Mook Oil Co.'s No. 1 Hutchinson, drilling at 730 feet; Murchison and others' No. 5 White, drilling at 1,045 feet; Oil Investment Co.'s No. 2 fee, showing oil at 1,107 feet; Phillips and others' No. 4 Wilson, drilling at 960 feet; Ramming and others' No. 5 Wilson, drilling at 1,015 feet; Riner and others' No. 3-A

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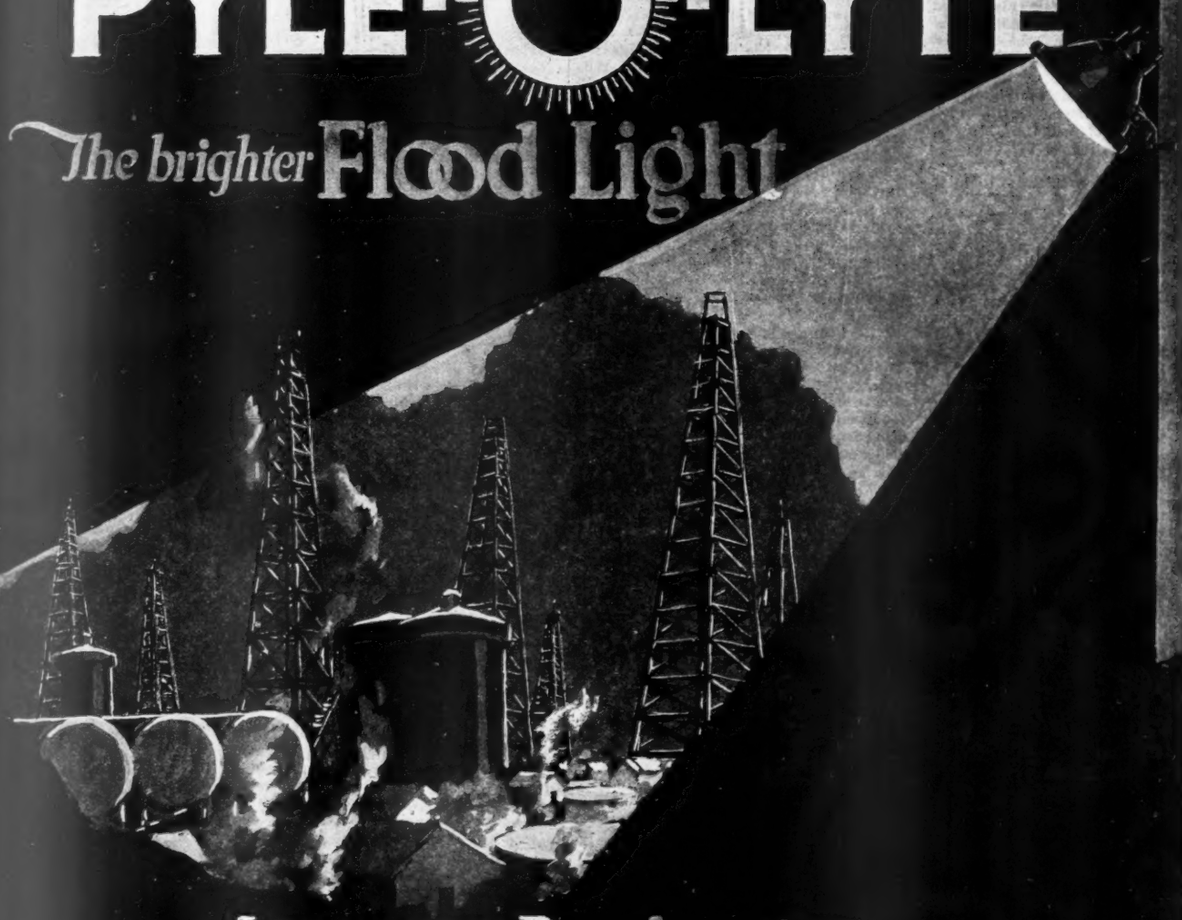

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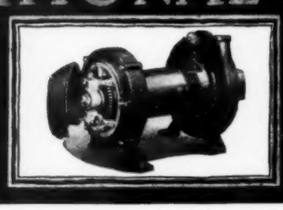

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Wilson, coring sand at 1,615 feet; Robertson and others' No. 5 Wilson, drilling in shale at 1,585 feet; same company's No. 15 Wilson, drilling at 200 feet; same company's No. 16 Wilson, drilling in rock at 500 feet; Rayzor and others' No. 1 Edwards, drilling at 900 feet; Simms Oil Co.'s No. 4 Parrish, drilling in shale at 1,425 feet; Woodburn Oil Corp.'s No. 15-A Wilson, drilling at 1,100 feet; Burns and others' No. 1 Kunkel, drilling at 870 feet; Clopton and others' No. 1 Harris, drilling at 980 feet; Cochran and others' No. 1 Anderson and others, drilling in shale at 1,425 feet; Green and others' No. 3 Abercrombie and others' drilling at 1,200 feet; Hobbs and others' No. 1 Lane, drilling at 1,115 feet; Magnolia Petroleum Co.'s No. 1 Robertson, drilling at 2,225 feet; McNamara Brothers' No. 1 Justice, underreaming. Saunders and others' No. 3 Logan, oil showing at 1,300 feet; Consolidated Oil Co.'s No 7-B Ragle, drilling in rock at 650 feet; same company's No. 2-E Ragle, drilling at 840 feet; Cullum and others' No. 4 Bridwell, drilling at 990 feet; Duke and others' No. 1 Turbeville, drilling at 920 feet; Fisher and others' No. 1 Rogers, drilling at 970 feet; Gwynne and others' No. 2 Rogers, setting casing at 1,265 feet; same company's No. 3 Rogers, drilling at 780 feet; same company's No. 4 Rogers, drilling at 530 feet; same company's No. 2 Wood, drilling at 990 feet; Grisham and others' No. 4 Davis, drilling at 670 feet; Harris and others' No. 1 Martin, drilling at 1,150 feet; Humble Oil & Refining Co.'s No. 2 Ragle, oil showing at 1,070 feet; same company's No. 1 Wood, drilling at 1,025 feet; Lyles and others' No. 1 Norton, drilling at 725 feet; Maer and others' No. 4 Bridwell, drilling at 1,110 feet; Maer and others' No. 5 Bridwell, drilling at 980 feet; Melat and others' No. 2 Goldsmith, drilling at 1,350 feet; Murchison and others' No. 2-C Harmel, drilling at 1,120 feet; Murchison and others' No. 3-C Harmel, drilling at 1,180 feet; same company's No. 4-C Harmel, drilling at 400 feet; same company's No. 3 Griffin, topped sand at 1,285 feet; same company's No. 5 Griffin, drilling at 670 feet; same company's No. 6 Griffin, drilling in rock at 590 feet; same company's No. 7 Griffin, drilling at 475 feet; Mutual Oil Co.'s No. 3 Harmel, drilling at 300 feet; Nicholson and others' No. 1 Prideaux, drilling in rock at 560 feet; Petroleum Producers Co.'s No. 2 Bridwell, drilling at 960 feet; same company's No. 5 Rogers, drilling at 860 feet; same company's No. 6 Rogers, drilling in rock at 500 feet; Ray and others' No. 3 Hausler, topped sand at 1,105 feet, Sun Oil Co.'s No. 6 Farmer, drilling at 200 feet; Ray and others' No. 7 Hausler, drilling at 300 feet; Scruggs and others' No. 1 Morrison, drilling at 200 feet; Shamrock Oil Co.'s No. 17 Goldsmith, drilling at 1,250 feet; Staley and others' No. 1 Kelley, drilling at 100 feet; Stump Oil & Gas Co.'s No. 1 Ward, drilling at 920 feet.

Young County Drilling

Applegate and others' No. 1 Zimmerman, underreaming; Brian and others' No. 1 Vernon, drilling at 985 feet; Burton and others' No. 1 Campbell, drilling at 620 feet; Christie Brothers' No. 3 McLaren, drilling at 1,240 feet; Consolidated Oil Co.'s No. 1 Bearden, drilling at 1,160 feet; Daniels and others' No. 1 Keath, drilling at 300 feet; Dunn and others' No. 1 Craig, drilling at 250 feet; Harris and others' No. 1 Andrews, drilling at 860 feet; Harvey and others' No. 1 Wilson, drilling at 250 feet; Heatherly and others' No. 1 Heatherly, drilling at 100 feet; Herbert Drilling Co.'s No. 1 Johnson, drilling in shale at 2,825 feet; Jones and others' No. 1 Jeffrey, drilling at 350 feet; Keener Oil & Gas Co.'s No. 1 Marshall, drilling at 1,890 feet; Kentucky Oil Corp.'s No. 1 Gilcrease, drilling at 100 feet; Knight and others' No. 1 Logan, drilling at 710 feet; Knight and others' No. 1 Jeffrey, drilling at 750 feet; same company's No. 1 Pringle, drilling at 200 feet; Litchfield and others' No. 2 Campbell, drilling at 300 feet; Monroe Production Co.'s No. 1 Cheney, drilling in shale at 2,790 feet; Murchison and others' No. 1 Campbell, drilling in rock at 675 feet; same company's No. 1 Gambrel, drilling in rock at 560 feet; Reed and others' No. 1 Campbell, drilling at 1,165 feet; Sims and others' No. 1 Carpenter, drilling at 100 feet; Union Oil Co.'s No. 1 Keathley, drilling in lime at 3,340 feet; Vance and others' No. 1 Daws, drilling at 2,360 feet; Verschoyle and others' No. 1 Wainscott, drilling at 200 feet; Whatley and others' No. 1 Donnell, drilling at 300 feet.

Stephens County Drilling

Critten and others' No. 8 Cobb, drilling at 560 feet; Interstate Consolidated Oil Co.'s No. 1 Lane, drilling at 200 feet; Mid-Kansas Oil & Gas Co.'s No. 3 Hill, Acct. 2, setting casing at 1,480 feet; same company's No. 3 Lee, will shoot at 3,175 feet; same company's No. 2 Williams, Acct. 2, drilling in lime at 2,485 feet; Pender Production Co.'s No. 3 Keel, drilling at 1,680 feet; Prairie Oil & Gas Co.'s No. 15 Atkins, fishing at 3,260 feet; same company's No. 2 Caldwell, fishing at 2,500 feet; Republic Production Co.'s No. 2 Knox, reaming; Snowden & McSweeney's No. 8 Ackers, Acct. 1, drilling at 3,040 feet; same company's No. 5 Higginbotham, fishing at 3,280 feet; Texas Consolidated Oil Co.'s No. 6 Martin, drilling at 2,450 feet; Buckeye Development Co.'s No. 8 Walker drilling at 2,200 feet; Clark and others' No. 1 Post, fishing at 1,450 feet; Cobb and others' No. 1 Simmons, drilling at 1,710 feet; Fouts and others' No. 1 McClesky, fishing at 3,580 feet; Kleinfelder and others' No. 1 Grims, gas showing at 3,170 feet; Knox and others' No. 1 Flournoy, oil showing and drilling in black lime at 3,745 feet; Lewis Oil Co.'s No. 1 Brown, drilling at 2,400 feet; Magnolia Petroleum Co.'s No. 9 C. B. Brown, fishing at 3,810 feet; same company's No. 7 J. W. Brown, drilling in lime at 3,060 feet; same company's No. 8 J. W. Brown, drilling at 2,710 feet; same company's No. 5 McCauley, drilling in lime at 3,235 feet; same company's No. 1 Taylor, drilling in lime at 3,890 feet; Mooke Texas Oil Co.'s No. 2 Head, drilling at 1,960 feet; Pender Production Co.'s No. 1 Hart, drilling in lime at 3,160 feet; Price and others' No. 4 Bruce, drilling at 1,700 feet; Schimmell and others' No. 1 Watson, drilling at 1,730 feet; Scott and others' No. 1 Curry, setting casing at 390 feet; States Oil Corp.'s No. 1 Boles, drilling in lime at 3,280 feet; Sudderth and others' No. 2 Bradford, drilling at 700 feet; Sun Oil Co.'s No. 6 Stoker, fishing at 3,113 feet; The Texas Co.'s No. 10 Curry, fishing at 3,220 feet; Texas Pacific Coal & Oil Co.'s No. 1 Veale, drilling in lime at 3,370 feet; Tripplehorn Petroleum Co.'s No. 1 Adams, drilling in lime at 3,990 feet.

Eastland County Drilling

Dorothy Oil Co.'s No. 1 Elliott, drilling at 1,850 feet; Dyer Brothers' No. 1 Norton, drilling at 565 feet; Magnolia Petroleum Co.'s No. 7 Barnes, drilling in lime at 3,500 feet; same company's No. 6 Harris, drilling at 1,265 feet; same company's No. 4 Rogers, drilling at 1,720 feet; Pittman and others' No. 1 Pettis, drilling at 1,160 feet; Reclamation Oil Co.'s No. 6 Bond, fishing at 2,195 feet; Root and others' No. 1 Wheeler, drilling at 2,950 feet; States Oil Corp.'s No. 8 Quiett, drilling in black lime at 3,390 feet; Williamson and others' No. 4 Fox, oil showing at 1,175 feet; Beeler and others' No. 1 Huestis, drilling at 900 feet; Eastland Oil Co.'s No. 1 Jordan, drilling at 2,000 feet; Knox-Lewis Oil Co.'s No. 1 White, drilling at 1,820 feet; Ladd and others' No. 1 Owens, drilling at 1,550 feet; Lorenzen and others' No. 1 Qualls, drilling at 1,230 feet; McMeans and others' No. 1 Storm, underreaming at 915 feet; Riley and others' No. 1 McClelland, setting casing at 1,900 feet; Rosenfield and others' No. 1 Brunett, testing sand at 3,205 feet; Root and others' No. 1 Ammerman, underreaming at 1,900 feet; same company's No. 1 Hart, gas showing at 3,205 feet; Weaver Oil Corp.'s No. 1 Dulin, drilling at 500 feet.

PRODUCTION REPORT
Week Ending December 4

Burkburnett	
Barkley & Meadows	600
Humble Oil & Refining Co.	500
Gulf Production Co.	765
Magnolia Petroleum Co.	3,000
McMan Oil Co.	365
Panhandle Oil & Refining Co.	340
Prairie Oil & Gas Co.	
Sinclair Oil & Gas Co.	40
The Texas Co.	50
Texhoma Oil & Refining Co.	485
Miscellaneous	430
	9,930
Total	16,925
Electra	
Empire Gas & Fuel Co.	1,260
Humble Oil & Refining Co.	180
Griswold Oil Co.	290
Gulf Production Co.	890
Magnolia Petroleum Co.	4,310
McMan Oil Co.	90
Panhandle Oil & Refining Co.	195
The Texas Co.	4,005
Texhoma Oil & Refining Co.	1,965
Miscellaneous	5,815
Total	18,940
Iowa Park	
Griswold Oil Co.	70
Gulf Production Co.	35
Humble Oil & Refining Co.	15
Panhandle Oil & Refining Co.	65
Texhoma Oil & Refining Co.	40
Miscellaneous	3,420
Archer County	
Empire Gas & Fuel Co.	755
Griswold Oil Co.	570
Gulf Production Co.	2,505
Humble Oil & Refining Co.	195
Magnolia Petroleum Co.	330
Panhandle Oil & Refining Co.	3,290
Prairie Oil & Gas Co.	1,275
The Texas Co.	780
Texhoma Oil & Refining Co.	3,355
Miscellaneous	27,080
Petrolia	
Gulf Production Co.	75
Magnolia Petroleum Co.	15
The Texas Co.	70
Miscellaneous	275
Total	44,321
Stephens County	
Empire Gas & Fuel Co.	75
Gulf Production Co.	1,310
Humble Oil & Refining Co.	970
Magnolia Petroleum Co.	640
Mid-Kansas Oil & Gas Co.	2,085
Prairie Oil & Gas Co.	1,020
Sinclair Oil Co.	50
The Sun Co.	350
The Texas Co.	1,920
Texas Pacific Coal & Oil Co.	1,040
Miscellaneous	7,210
Total	16,670
Eastland County	
Gulf Production Co.	395
Humble Oil & Refining Co.	100
Magnolia Petroleum Co.	525
Panhandle Oil & Refining Co.	350
Prairie Oil & Gas Co.	640
Sinclair Oil Co.	415
The Texas Co.	285
Texas Pacific Coal & Oil Co.	925
Miscellaneous	2,520
Total	6,155
Other Fields	
Strawn—	
Texas Pacific Coal & Oil Co.	210
Miscellaneous	500
Moran—	
Empire Gas & Fuel Co.	40
Humble Oil & Refining Co.	325
The Texas Co.	140
Texhoma Oil & Refining Co.	150
Miscellaneous	2,175
Coleman County—	
Miscellaneous	65
Brown County—	
Miscellaneous	715
Comanche-Eastland—	
Humble Oil & Refining Co.	215
Magnolia Petroleum	1,135
Mid-Kansas Oil & Gas Co.	440
Sinclair Oil Co.	50
The Texas Co.	185
Texas Pacific Coal & Oil Co.	150
Miscellaneous	3,345
Young County—	
Gulf Production Co.	85
Sinclair Oil Co.	450
Panhandle Oil & Refining Co.	150
The Texas Co.	45
Miscellaneous	3,180
Mitchell County	1,535
Reagan County	7,285
Jack County	25
Scurry County	40
Carson County	1,130
Hutchinson County	225
Callahan County	1,495
Wilbarger County	4,875
Total	30,310
Total this week	132,885
Total last week	135,890
Loss	3,025

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Dec. 6.—With some 10 holes completed in Mexican fields the past week three wells finished in pay with new potential production of 7,150 bbls. and seven tests were failures. The best completion was at Ebano where Mexican Petroleum Co.'s No. 50 La Dicha is rated good for 5,000 bbls. at 2,194 feet. In the old Panuco Field Transcontinental Petroleum Co.'s No. 12 Ojital is a 2,000-bbl. well at 1,550 feet, a shallow hole for that sector. International Petroleum Co. scored one small 150-bbl. well in its No. 102, Lot 5 Cacalilao, at 2,270 feet.

The failures follow: International Petroleum Co.'s No. 107, Lot 5 Cacalilao, a duster at 2,153 feet. Mexican Sinclair Petroleum Corp.'s No. 62, Lot 3, same sector, a duster at 1,906 feet. Transcontinental Petroleum Co.'s No. 107, Lot 4, same, dry at 2,110 feet. On its right of way running through Chapacao, National Lines' No. 1 is a dry hole at 2,400 feet. In the Marland Field, Cia. Franco Espanola, No. 18 Limon, is a failure at 2,045 feet. In Corcovado, International Petroleum Co.'s No. 2, Lot 6, has been shut down for orders at 2,507 feet, in the gray lime, a failure at that depth; and Powers and others' No. 1 Garruche-Corcovado, is a duster at 2,200 feet also in the gray limestone.

There were no completions in the southern fields.

Southern Fields

Drilling operations in the southern fields during the week are epitomized as follows: Huasteca Petroleum Co.'s (Mexican Petroleum) No. 50 Cerro Azul, drilling in blue shale at 530 feet; No. 51 in gray shale at 1,060 feet, and No. 53 in the same formation at 150 feet. Derricks are either up or locations being cleared for three more tests. In its Tierra Blanca, Huasteca's No. 28 is due to be finished any day now as it is in gray lime at 2,152 feet; No. 33 in brown shale at 445 feet; derrick up for No. 34, and locations are being cleared for four more tests. At Chapopote Nunez, Huasteca's No. 9 is drilling in brown shale at 1,020 feet. Up at Grandilla, No. 1 is drilling in sandy shale at 660 feet. Mexican Eagle Oil Co.'s No. 10, Lot 148 Amatlan, is drilling in brown lime at 2,232 feet; No. 41, Lot 120, in dark blue shale at 1,790 feet; No. 43, Lot 260, in shale at 1,435 feet. Mexican Eagle's No. 7 San Diego continues making dry gas with gate valve on 6⅝-inch opened one-half, blowing a big volume of gas with the pressure gauge standing at 980 pounds. Agwi company's (Atlantic Gulf Oil Corp.) No. 24, Lot 2, Chiconcillo, is drilling in the San Felipe at 2,140 feet. Cortez Oil Corp.'s No. 11 Aguada is drilling in shale at 1,625 feet. La Corona Petroleum Co.'s No. 33-A, Lot 16 Zacamixtle is a derrick. International Petroleum Co.'s No. 49 Toteco cemented 4½-inch at 1,835 feet in lime. Island Oil & Transport Corp.'s No. 4, Lot 96 Chinampa, has cemented 10-inch in shell at 1,935 feet. Mexican Gulf Oil Co.'s No. 6, Lot 8 Tepetate, cemented 8-inch in hard gray shale at 1,654 feet. Mexican Sinclair Petroleum Corp.'s No. 14, Lot 226 Amatlan, set surface casing in blue shale at 280 feet. Penn Mex Fuel Co.'s No. 14 Jardin cemented 10-inch at 2,197 feet in the San Felipe; and its No. 27 Alamo is rigging rotary.

Northern Fields

In the Cacalilao sector of the northern fields, drilling operations follow: La Corona Petroleum Co., in Lot 4: No. 144, showing 600 bbls. of oil from 1,560 feet with the drill making hole in the San Felipe at 1,655 feet; Nos. 145 and

(Continued on Page 131)

Wildcats Drilling

Hutchinson County—Dixon Creek Oil Co.'s No. 1 Smith is underreaming at 1,930 feet; Douglas Oil Co.'s No. 1 Whittenburg, set casing at 2,585 feet; Amarilla Oil Co.'s No. 2-B Bivens, gas showing at 2,595 feet; Prairie Oil & Gas Co.'s No. 1 Shaw, drilling in lime at 2,150 feet.

Carson County—American Refining Co.'s No. 3 Burnett, drilling at 2,215 feet; Crosby Oil Co.'s No. 1 Burnett, drilling in lime at 2,220 feet; Danciger Oil & Refining Co.'s No. 1 Burnett, drilling in shale at 3,070 feet; Gates Oil Co.'s No. 1 Burnett, oil showing at 2,960 feet; Marland Oil Co.'s No. 1 Burnett, drilling in lime at 2,330 feet; Silk and others' No. 3-A Burnett, drilling at 2,200 feet; Skelly Oil Co.'s No. 2 Burnett, fishing at 1,815 feet.

Gray County—Clark and others' No. 1 Combs & Worley, drilling in lime at 2,200 feet; Dillard and others' No. 1 Henry, drilling in lime at 2,860 feet;

(Continued on Page 131)

Rocky Mountain Area

By F. B. Taylor

Midwest Co.'s test to central part of Lakota sand, Salt Creek finds tremendous gas pressure in Dakota sand, encouraging expectations of record well. California Co. well in Byron Field, Big Horn County, may open new pool. Natrona County, Wyoming, test gives promising indications.

CASPER, Wyo., Dec. 6.—The Midwest Refining Co., drilling on Section 35-40-79 in the Salt Creek Field, reached the Dakota sand and encountered a tremendous gas pressure in the well that is being drilled as a test for the central part of the Lakota sand structure at Salt Creek. The gas pressure was so heavy it blew the control head off the casing and severely injured two of the crew. Efforts are now being made to mud off the gas so as to continue the drilling.

This well was located after a careful survey of all data at hand from the wells drilled to the Lakota sand in Salt Creek. The location was made with the idea of placing the test as near the central part of the Lakota structure as possible and it was considered therefore that this well would probably come in as large or even larger than any producer yet found in the field. This would mean a well in excess of 20,000 bbls. daily.

So far the indications point to a realization of these expectations. The well has shown good oil flows all the way down, some of which would have made producing wells of commercial size. This strike of gas in the Dakota sand is an indication that has not been found before in the field for the Dakota usually carried oil or water. The Dakota was found at a shallower depth than at any well ever drilled in Salt Creek; the sand came in at 2,235 feet and the gas blew in as soon as the tools went through the cap. The drilling stopped about 2 feet in the sand.

It is considered there is about 60 to 70 feet between the present bottom of the hole and the top of the Lakota sand where the heavy production is expected. Until the gas flow is mudded off, no further drilling can be done, but this is expected to be completed by the first of the week and the well will probably be in by the end of the coming week.

At first, when the well blew itself in, it was thought it had started to flow oil, but this was caused by the oil being carried in the hole from the sands above, being blown out by the gas pressure. As soon as the well cleaned the hole the gas became dry and there was no more oil showing. John Moyer, field superintendent for the Midwest at Salt Creek, was among those injured by the flying steel of the control head.

Big Horn Strike

The new strike of the California Co. in the Byron Field in Big Horn County, Wyoming, is attracting much attention and looks like the discovery well of a new pool. The oil is very light and on this account may prove to be a freak; the gravity is 49 degrees, a very high gravity for this region.

The well is now in the Torchlight sand, found at 2,679 feet and the oil came in a few feet farther. Drilling is being continued as there are several sandstone members of this formation which correspond to the Frontier formation in Central Wyoming. In the Big Horn Basin this formation also includes the Peay sandstone which is not present in the other parts of the State. Below the Frontier formation lie the Mowry and Cloverly, or the Muddy sand and Dakota group of Central Wyoming, the Mowry being the Muddy sand and the Cloverly being the Dakota formation. The well is estimated at 50 bbls. daily from its present showing.

The strike made at Cody several months ago at about 1,200 feet by the Cody Oil & Gas Co. is still showing for a producer though the well has been shut in since it was struck. Tankage is now being placed to give the well a test. This oil is coming from the shale and may lead to a shale development there. The location is about 3 miles northeast of Cody on the north side of the Shoshone River.

In the Oregon Basin south of Cody about 15 miles, the Ohio Oil Co. is drilling at about 1,800 feet with a rotary rig and the Florence Oil & Gas Co. is also active around 1,900 feet. The Fifty-Six Petroleum Co. of Montana is also preparing to start a test on Section 17-52-101.

Scouts are looking over the old Cosden operation on Crystal Creek where the Cosden interests drilled four black oil producers and which is shut down at present. The prospects for the highway building in the north end of the Big Horn Basin looks bright for next year and the State highway engineers are reported to be planning for the extensive use of the asphaltic oils on the roads. This would mean the opening of several black oil operations now shut in in the Big Horn Basin Country. Crystal Creek produces an oil that can be applied to the road work in its crude state without refining and only needing heat when being placed on the road.

Colorado Production

Colorado oil fields averaged 1,387 bbls. daily production for the week ended November 22. This includes production from Craig and Florence Fields only, the Fort Collins well of the Union Oil Co. not yet being on a production basis, the shipments having been made from storage. Since November 6, when the first shipment was made, a total of 204 cars of Fort Collins crude have been shipped by pipe line and rail, or approximately 40,800 bbls. of storage crude.

The Sun Oil Co. well on the Carbonera structure near Fruita, Mesa County, on the west slope, is reported to be making 15,000,000 feet of gas daily. The gas is coming from the Frontier sand at 2,865 feet, and the well is still drilling for the Dakota sand at 3,100 to 3,200 feet.

The Midwest Refining Co. is waiting for cement to set in its test well on the Iles Dome, in Colorado, before making a test of a recent strike in the shale below the sand which yielded emulsified oil and water. The T. S. Hogan interests, which have drilled extensively in Montana and already have one or more operations in progress in Colorado, have spudded in a new test well on the Iles Dome. The Yarg Oil & Refining Co. well on the same structure is also standing idle while cement sets. Midwest Refining Nos. 2 and 3 are both drilling.

The Carter-Texas test on the Sage Creek Dome on the west slope is not far off the sand. This well has encountered sufficient gas to supply fuel, and its completion is awaited with interest.

In southwestern Wyoming, the Wyoming Reserve Oil Co., known as the Newlon interests, is completing a well in the La Barge Field which is expected to be a 20-bbl. producer. This is the third well to be completed by this company and all have been small producers of high grade oil. The new well is the first of a series of seven for which a contract has been let. The well is bottomed at about 600 feet. At present there is no pipe line outlet for this production, but the Wyoming Reserve hopes to develop sufficient production in its nine wells to warrant pipe line construction.

Montana Shipments

During the year ended October 31, 1924, the Cat Creek and Kevin Sunburst Fields in Montana shipped by pipe line 2,497,563 bbls. of crude oil, according to statistics compiled by the Montana Railroad Commission, which controls the operation of the pipe lines in the State. The Cat Creek Field produced 1,604,645 bbls. of oil and the Kevin Sunburst Field 892,918 bbls. The banner month of the year for Cat Creek was March, when the total shipments amounted to 205,985 bbls. Until the end of the summer, the Cat Creek daily runs exceeded those of the Kevin Sunburst district, but from the advent of cold weather, the Kevin runs have exceeded those of the older field. A decrease in Kevin Sunburst production was also noted several weeks ago, but as the operators are now steaming their oil it is expected the runs will be larger, as the decrease was occasioned by the chilling of the water in the oil. Operators have been notified to keep down the water content, or steam the oil run into the lines.

Cat Creek Field in Montana produced 102,065 bbls. of crude from Government lands during October, according to the statement of the Lewistown Refining Co. which takes crude from that field. During the 10 months of this year, the field has averaged 7,000 tank cars per month.

Natrona County Test

The Wallace Creek well of the Mutual Oil Co., drilling in western Natrona County, is becoming interesting. This test is in the Tertiary and expects to test the upper sands in the Cretaceous. The hole is to go 4,000 feet or more and at present it is at 1,770 feet and the drillers found a showing of gas in the Mesa Verde at about 1,600 feet that is considered a good indication. A well drilled near this structure in 1913 developed a heavy gas pressure about 1,700 feet and would have made a commercial gas well. The operators were French and left when the war broke out and have never returned. In the meantime, the water broke in and drowned the gas.

The water from the Shiloh well on Tisdale was turned into the Intermountain Water & Power Co.'s line the past week and is now filling reservoirs in the west side of the field. Work is progressing on the distribution lines that will carry water to other parts of the field and from now on the matter of water in Salt Creek will no longer be the problem it has been in the past.

The Union Oil Co. of California is still drilling on the test on the Douglas Lake Dome near Fort Collins, Colo. This well was thought to have reached the Dakota and Lakota sands and found water, but there is some claim the Dakota sand has not yet been reached.

Runs for the Past Week

Salt Creek	57,930
Teapot	1,680
Big Muddy	3,710
Grass Creek	3,230
Elk Basin	850
Greybull	20
Rock River	3,020
Notches	186
Rex Lake	230
Lance Creek	1,000
Poison Spider	440
Osage	350
Hamilton Dome	600
Lander	320
Byron	50
Pilot Butte	60
Lost Soldier	5,050
Ferris	60
Craig	1,075
Cat Creek	3,150
Sunburst	3,035
Miscellaneous	775
Total	88,815

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 8.—In the Irma-Wainwright Field, east central Alberta, British Petroleum's No. 4 is flowing and has filled all the available storage. A carload of empty barrels has been secured to hold additional oil, and permanent tanks will likely be provided. British Petroleum's No. 3, Section 29-45-6w-4 has been tested in the lower oil sand. The test showed considerable crude of a lighter quality than that encountered in other Irma-Wainwright wells, but after bailing a short time salt water came into the hole. A swab is being secured, also a core barrel small enough to carry the hole deeper if swabbing fails to make the well a producer. British Petroleum's No. 2, Section 30-46-6w-4 in which a pump was installed recently is having trouble with sand and so far the drillers have not been able to remove the sand sufficiently to use the pump. British Petroleum's No. 5 is rigged up.

Maple Leaf Oil & Gas Co.'s No. 1, Section 24-45-8w-4 is at a standstill. The Edmonton Gas & Development Co. which had the contract for this well has removed its men, except for a watchman, and no capacity test is expected in the near future. No. 2 is rigged up on the same site but when it will start drilling is uncertain. Western Consolidated, Section 20-45-6w-4 has installed a new bull wheel and resumed drilling, and is making good headway. Wainwright Oil Producers Syndicate, Section 36-44-7w-4 is drilling with a single crew.

In the foothills, east of Edmonton, Imperial Oil, Ltd., Coalspur No. 2 is drilling. The outfit has been completely housed in, and drilling will be continued through the winter unless production is secured earlier.

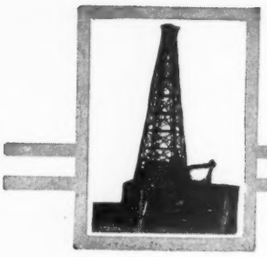
The Northwestern Utilities, Ltd., has recently finished the testing of its main pipe line from the Viking Field to Edmonton, preparatory to winter.

In Ontario Fields

In the Ontario Fields, in Norfolk County, Dave Laur has finished a gasser for the Dominion Natural Gas Co. between Simcoe and Jarvis, with a small production, probably between 50,000 and 100,000 feet a day. The Dominion Natural Gas Co. has also been doing some work in the neighborhood of Maybee's Corners, near the Elgin-Norfolk County line. The first well was good for around 130,000 feet a day. No. 2 is down about 1,040 feet but has run into a crooked hole. No. 3 has been located but has not yet started work. In the eastern field, the Michener Syndicate, this season, with an oil finding device, located a couple of tests for gas in Moulton Township, Haldimand County, and got a fair production in both. This was in territory previously drilled over and abandoned by other companies. Near Weston, in the Toronto district, a Toronto Syndicate is reported working on a test on the Trenton limestone.

Outside this, there is no activity at present in the way of Trenton drilling,

(Continued on Page 130)



East Central Texas

By Staff Correspondent

Feverish activity continuing at Wortham. Interest centers in well of Penn and others. Field probably three or four miles long and about half-mile wide. May take 60 to 90 days to determine ultimate productivity. Simms Oil Co. to drill 12 wells on Marland Oil Co. acreage.

WORTHAM, Tex., Dec. 6.—They are actually hog wild here at Wortham. No other expression will do justice to the situation that now exists and that has existed for the past two weeks in this little town that lies directly in the path of a new oil field.

For more than two years Wortham has been trying to stage an oil boom. Ever since the sensational and irrational days at Mexia the little town has craved the excitement that can be had only through such an experience. It was denied that glory two years ago when enterprising citizens built the town of Currie 8 miles to the north and copped the boom that accompanied the drilling there.

But now Wortham has her boom. And it is admittedly the fastest and wildest boom that has been seen in many years. In this respect it has probably never had an equal. In fact, it has gained such momentum and has moved so rapidly that it has just about spent its force already. But they are all here now, the big ones and the little ones alike. And they have staged such a scramble for leases and drilling sites as has seldom been seen anywhere in the oil country.

The new field was opened up by the Boyd Oil Co., headed by Col. Albert E. Humphreys, discoverer of the Mexia Field. The first well was the company's No. 1 Boyd, about 2 miles south of the town, which started at 2,500 bbls. a day. This was brought in on November 13 and is now making 800 bbls. a day. The bringing in of this well started a flurry of leasing which had gained only moderate headway when two weeks later on Thanksgiving day the Boyd Oil Co. brought in its No. 1 Roy Simmons just on the southern outskirts of the town and about 1½ miles north and slightly to the east of the Boyd No. 1. This well started at 8,000 bbls. a day. It is flowing through a choke and the bailer is still in the hole. Yesterday's report on a 24-hour flow was 4,800 bbls.

Right Up to Townsite

This brought production up to the edge of the townsite and gave considerable encouragement to Penn and others who were drilling on the McCorkle in the eastern part of the town. On the outcome of this well depends very largely the drilling of some 50 locations to the north and east that are now in doubt but many of which already have derricks under construction.

Production is coming from the Woodbine sand found underneath the Austin chalk, the customary marker along the Balcones fault. It is also found at about the regulation depth, No. 1 Simmons having stopped drilling at 2,962 feet. It is the Woodbine sand that is producing at Mexia, Powell, Richland and Currie.

Extent of the Field

The new field which apparently will extend in a northeast-southwest direction, it is generally conceded will be a long narrow strip, though probably very productive. The definite bounds of the pool no doubt will be established within 60 to 90 days' time. The best authorities differ in their opinion as to its width, varying from two locations wide to not more than half a mile in the widest place. A string of dry holes on each side has just about already definitely established this fact.

The length of the new field is a more doubtful point. It may extend a distance of as much as 4 miles, though this is even doubtful. To the south it cannot extend very far without running into the old Fish Pond Pool north of the town of Mexia and on the north of Wortham it is already cut off by an area well defined by dry holes.

While the ultimate recovery from the new field is a matter for scientific determination, it is being guessed at considerably right now. It is not expected to be as great as the recovery from either the Mexia or the Powell Field. Mexia, to date it is said, has produced close to 65,000,000 bbls. of oil while the recovery to date from the Powell Field is said to be close to 57,000,000 bbls. The peak at Mexia was approximately 150,000 bbls. daily, while the peak at Powell was over 356,000 bbls. a day. The daily production at Mexia is now a little over 20,000 bbls. and at Powell it is about 67,300 bbls. and declining each week.

A Winter Flood of Oil

From 60 to 90 days should suffice to tell the story of the actual size of the new Wortham Field and give engineers some idea as to what may be expected as a final recovery from the pool. This time element may appear to be short but it is generally regarded as conservative. Already in the prospective area of the new pool there are easily 25 wells drilling and approximately 140 derrick patterns have been turned out. Close to 100 derricks are completed at this time and the balance are under construction.

Lease trading has already passed the peak, in fact it is just about over and the drilling campaign has gained good headway. Trading in leases has been wild and prices have been wilder. There has also been extensive trading in royalties. Major companies, independents and individuals have been buying frantically along the line that is thought to be productive, and prices have ranged from $1,000 to as high as $5,000 an acre. One of the major companies is known to have issued its draft in the amount of $26,000 for one 5-acre tract.

Boyd Oil Co.'s No. 1 Roy Simmons, in Wortham Field.

Of course there have been individual purchases, particularly in town lots for prices much higher than these, and Wortham residents have profited greatly from this frenzied buying of leases. A local banker is authority for the statement that within the past two weeks not less than $2,000,000 has been paid to local residents and land owners for their leases and royalties.

Frantic Drilling Campaign

And now the drilling campaign is getting under way just as frantically as the leasing campaign has been for the past two weeks. The Humble Oil & Refining Co. and the Boyd Oil Co. are the largest leaseholders in the prospective territory. If the field comes up to expectations the Boyd Oil Co. will have close to 100 wells to drill, it is announced, and it is reported that the Humble Oil & Refining Co. has already arranged for the drilling of 40 wells. The Marland Oil Co. has a number of leases. A good part of the property is the townsite. This company is reported to have subleased 22 town blocks, holding a three-eighths overriding royalty. Much of the town property has been leased with the owners holding overriding royalties.

Practically every truck and every teaming contractor from Mexia is said to have been pressed into service, so great is the demand for moving material into the field. The manager of one of the big supply companies states that every one of his stores in North Texas and south Oklahoma and even his Shreveport house has been drained in order to meet the supply demands in the new field.

So great has been the rush for permits to drill that Judge H. E. Bell, chief supervisor of the oil and gas division of the Railroad Commission has come from Austin and opened temporary offices that he may be in a position to act quickly on drilling permits. He has temporary offices in the Chamber of Commerce building at Mexia for this purpose.

As in the Mexia Field there will probably be considerable drilling along the railroad right of way in the new Wortham Field. The Southern Pacific line runs right through the heart of the prospective area and already the Rio Bravo Oil Co., subsidiary of the Southern Pacific road has asked for permits to drill a number of wells along this right of way.

Pipe Line Situation Good

There is also a flurry in pipe line work. The Prairie Pipe Line Co. has already made connections with the two wells brought in by the Boyd Oil Co. and has contracted with the Boyd company for the delivery of 3,000,000 bbls. of crude from the new field. This amount is to come from three-fourths of the total production of the Boyd company and is contingent upon the production of the company. The Prairie, according to the terms of the contract, may take as high as 30,000 bbls. daily.

The Humble Oil & Refining Co. chartered a special train to move a pipe line gang from Archer County to the new Wortham Field, in order to rush its pipe line work to the field. The special consisted of one flat car, two baggage coaches and two passenger coaches.

Most of the big pipe line companies are in easy reach of the new field and there doesn't appear to be any danger of congestion in this respect. Among the lines that can reach the new field on short notice in addition to the Prairie and the Humble are the Sinclair, the Gulf the Magnolia, the Pure Oil Co. and The Texas Co.

There will be no difficulty in getting pipe line connections, but if 50 or 60 wells come in in a bunch as they are expected to do around Christmas time, it may cause a congestion because of the difficulty in getting the oil to the main lines of some of the companies and to their storage tanks. The Prairie, Sinclair, Pure, Texas, Gulf and Magnolia pipe lines will all be active solicitors of crude to the limit of their ability to handle the oil, but the Humble is out of the market as it has a large amount of favorably located acreage which it will develop and from which it expects to obtain a large production.

Men in position to discuss such matters have been speculating some as to what effect the new field may have upon the price of crude oil. Some are exceedingly nervous, seeming to possess fears that it will mean a reduction in the price of crude. Others, however, express the belief that it will have no more effect than to delay advances in crude prices which they had expected to come around the first of the new year.

Transportation facilities are fairly good. The Southern Pacific Railroad, on which Wortham is located, has in the past been burdened with both the Mexia and Powell booms and was in a position to quickly handle the new business accompanying the bringing in of the Wortham Field.

Hoosier's Test a Failure

The failure of John Hoosier and others' No. 1 Stubbs on the Longbotham survey, which was abandoned as dry at 3,140 feet, was no surprise, as the location was felt to be too far west to be within the narrow strip of productive sand lying against the fault, although this conclusion was not reached until after the completion of the two Boyd Oil Co. tests, on the Simmons and the Boyd farms. The test of the Kirby Petroleum Co. on the Bounds farm, which is within half a mile of the big well on the Simmons farm, is believed to be two locations from the fault line, which, if it turns out to be correct, should make most of the small leases productive. Hoosier's dry hole is about 1½ miles north of the Kirby well. The geological "dope" on the Wortham production streak is that it runs northeasterly from its southernmost limit; that it takes in the southeast quarter of the town of Wortham, and after passing the limits of the town, swings northerly. This may be revised by later events, but it is on this assumption that the Humble Oil & Refining Co. protected itself with acreage north and northeast of the town, as well as buying heavily close to Boyd Oil Co.'s acreage southwest of the town.

R. R. Penn and others' test on the McCorkle farm, after setting pipe at 2,904 feet, drilled to a total depth of 2,963 feet where liner was set. The hole was bailed down 1,500 feet, with nothing showing in the way of oil or gas. More of the rotary mud will have to be bailed out before the well may be able to show whether or not it is a producer. At this writing the test is showing indications of being a good well.

The Simms Oil Co. has made a deal with the Marland Oil Co. by the terms of which it will drill 12 wells on Marland acreage for a half interest in the acreage involved, which includes 11½ acres on the East Wortham townsite; seven acres on the Calama tract, west of Wortham; six acres on the Simmons tract and 15 acres offsetting northeast the Boyd Oil Co.'s No. 1 Simmons. The

(Continued on Page 130)

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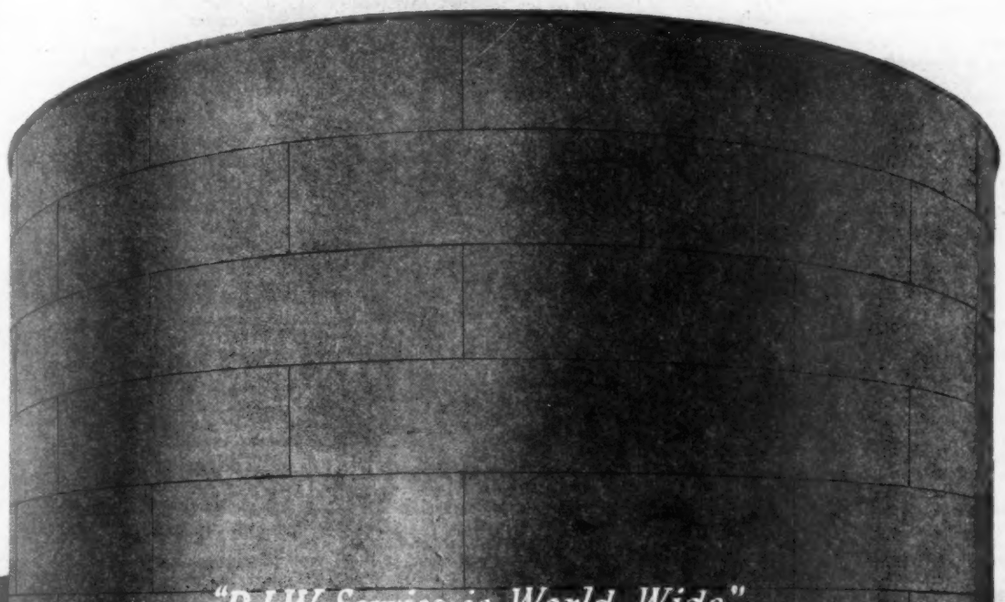

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Kentucky—Tennessee

By Vern T. Whitney

Nutty & Plye's No. 1 Jesse Swope, making 28 bbls., extends area at Owensboro, Ky. Tinsley Bottom well, Clay County, Tennessee, makes 100 bbls. I. N. Harkless' No. 5 in Hurricane district, Pellville Pool, Kentucky, 50 bbls. flush. Black Gum Oil Co. gets 20-bbl. producer in Lee-Owsley County district.

BOWLING GREEN, Ky., Dec. 8.—The past week in the Kentucky field was one of the dullest for some time. Very few completions were recorded from either section of the State and only one was of any particular interest to the producer. It was Nutty & Pyle's No. 1 Jesse Swope, in the Owensboro district, which started off at 28 bbls. from the Barlow sand. This test is important as it opens a new prospective area 3 miles south of the Herbert school house district and 1 mile northeast of the Collier Station wells. It is also the first extension made in the field out of 20 holes drilled since the first of the year.

At present approximately 105 wells connected to the gathering lines of the Indian Pipe Line Corp. in the Owensboro district are producing close to 13,000 bbls. monthly, with a daily average of a little better than 4 bbls. to the well.

It is reported that the recent big well at Tinsley's Bottom in Clay County, Tennessee, has been tubed after which it started flowing through the tubing at the rate of about 100 bbls. daily. According to the owners, six 250-bbl. tanks are full and more tankage is being hauled to the lease.

Week's Work

A decrease of 585 bbls. in initial production, two less completions, five fewer producers, the same number of dry holes and three more gas wells is the record of the week just passed in the whole of Kentucky compared with the previous week. The wells were distributed by counties as follows:

County—	Comp.	Prod. Wells	Prod.	Dry	Gas
Lee-Owsley	5	5	47	0	0
Barren	5	4	22	0	0
Allen	4	1	4	3	0
Owensboro district	3	3	79	0	0
Johnson-Magoffin	3	3	24	0	0
Lawrence-Johnson	2	1	4	0	1
Boyd	1	0	0	0	1
Floyd	1	0	0	1	0
Wayne	1	1	12	0	0
Warren	1	1	12	0	0
Cumberland	1	0	0	1	0
Total	27	19	204	5	3
Total last week	29	24	789	5	0
Difference	2	5	585	0	3

Western Division

The Owensboro district, comprising Hancock, Ohio and Daviess Counties, which furnished the most important well of the week, also had the largest producer in I. N. Harkless' No. 5 on the J. L. and A. T. Casey farm, in the Hurricane district, 4 miles south of the Pellville Pool. This well, which was drilled to offset No. 2 on the same farm, made 50 bbls. flush from the shallow Jett sand at about 478 feet. No. 1 G. M. Burdette, east of Casey No. 1, completed sometime ago, is a light stripper from the Jett sand.

Barren County

It appears that the recent completions of T. L. Gorby on the Taylor, Lessenberry and Cassidy farms southwest of the Emery-Moore Pool, in Barren County, will serve as a connecting link to that pool, as wells on the aforementioned leases have found production in the same sand as those in the Emery-Moore Pool. On the Taylor lease, two wells have been completed making 8 bbls. each; on the Lessenberry two, good for 12 bbls. each; while the Cassidy wells were rated at 20 bbls. Gorby is now starting a test on the Bybee farm a half a mile southwest of the Emery-Moore area and the same distance from the Taylor, which if it proves productive, will serve to lengthen the Emery-Moore Pool a little more than 3 miles from its proven territory.

The best well for the week was Fred Moore's No. 4 Howard, in the Emery-Moore Pool, 3 miles west of Glasgow, which pumped 12 bbls. from a total depth of 530 feet after being shot with 30 quarts of nitro. The shale was topped at 254 feet and drilled through at 304 feet. Casing was set at 310 feet. The cap rock was from 501 to 506 feet and the oil sand from 506 to 515 feet. In the same pool, Norris Brothers finished their No. 4 Starr for a 4-bbl. pumper at 568 feet. The shale was found from 335 to 386 feet and the cap rock from 538 to 545½ feet. The sand from 456½ to 553 feet was shot with 30 quarts. Six and one-quarter inch casing was set at 140 feet. The Henderson Oil Co.'s first attempt on the Burris tract, adjoining the Jess Wininger on which the Carter Oil Co. is drilling, made 3 bbls. after being shot with 30 quarts at 535 feet.

Jackson and associates' No. 1 Hutcherson, 1½ miles north of Glasgow on the Jackson Highway, tested 3 bbls. from a total depth of 600 feet. This test was drilled one-half mile to the northeast of the Hall Baker well which opened a new producing area to the north of town. The Wood Oil Co.'s No. 1 John Church, offsetting the Hall Baker to the west, has the appearance of being a good producer. The well will be shot after which a test will be made.

The new Baker Pool looks very promising at this time and there will be quite a bit of activity in that section for some time.

At Hiseville, 10 miles north of Glasgow, Horace Coombs brought in a good gasser on the Duff farm at an approximate depth of 615 feet.

Drilling Activities

Emery-Moore Pool: Ziegler Brothers, Scott & Hice's No. 3 Bradford, drilling at 200 feet; Star Oil Co.'s No. 12 Ritchie, cleaning out after shot; No. 13, drilling at 230 feet; same company's No. 4 Free, shut down; Mazel Oil Co.'s No. 5 Neeley, waiting on shot; Fred Moore's No. 2 Bruton, drilling at 150 feet; Carter Oil Co.'s No. 1 Jess Wininger, offsetting No. 2 Burris, shut down on top of cap rock at 515 feet; Moore & Baker's No. 2 Hans Gassaway, shut down at 232 feet; Mazel Oil Co.'s No. 6 Childress, spudding; Roedener and others' No. 1 Price heirs, drilling at 368 feet; Reese & Co.'s No. 1 Daughter, adjoining the Bradford, was spudding; T. L. Gorby's No. 3 Lessenberry and No. 3 Taylor, are locations; same party's No. 1 Chamberlin was drilling at 365 feet; No. 1 Bybee, spudding; Porter and others' No. 1 McLaughlin, drilling at 362 feet; Esslinger Oil Co.'s No. 1 Bud Mansfield, adjoining the Taylor, drilling at 330 feet. A slight showing of oil was had at this depth.

In the Baker Pool, just north of Glasgow, the Consolidated Gas Co.'s No. 1 Charles Bradford, northwest of No. 1 Hall Baker, is in a gas sand; Norris & Harrington's No. 1 Evans, 800 feet south of No. 1 Hall Baker, was spudding; Wood Oil Co.'s No. 1 John Church, waiting on a shot; same company's No. 3 Will Church, 550 feet from the Baker, drilling at 322 feet.

Ten other wells were going downward in other sections of the country at unknown depths.

Allen County

Reports from Allen County show that three dry holes and one producer were completed during the week. Drilling work is becoming more general as operators are looking forward to a boost in the market.

In the Frost Pool, 3 miles southwest of Scottsville, R. O. McLain brought in No. 5 on the Warren Frost lease for 4 bbls. at 312 feet. The recent completion of the White Plains Oil & Gas Co. on the Hornbuckle farm is still flowing at the rate of 12 bbls. per hour. Additional tankage has been erected on the farm and another well is in the sand.

In the Trammel Creek district, Work & Co.'s No. 3 on the B. Welsh tract was dry and plugged at 312 feet.

In the Gainesville Pool, north of Scottsville, the White Plains Oil & Gas Co.'s No. 6 Younger Tabor was dry and abandoned at 447 feet. In the same vicinity, near Seattle, F. J. Chipman's No. 4 R. F. Williams was a duster at 388 feet.

Drilling Wells

In the Gainesville area, the Lewis Oil Corp.'s No. 2 W. E. Oliver was on top of the pay sand; C. K. Boller's No. 2 Meredith is a location; Lee Moore's No. 1 Lee Moore was drilling in the shale; O. C. Fletcher's No. 7 J. T. Johnson, drilling at 320 feet; Unique Oil Co.'s No. 7 Lucy Boucher is a location; W. R. Thompson's No. 12 W. L. Motley is a location; Russell Oil Corp.'s No. 15 Russel, drilling in the shale; C. Guy's No. 7 Buchanan, drilling at 112 feet; Reed & Smith's No. 1 Willoughby, below the regular pay in this district.

To the southwest of Scottsville, including the Wheat, Frost, Walker and Kerley Pools, the White Plains Oil & Gas Co. is spudding in No. 4 J. R. Hornbuckle; Poynter and associates were drilling at 29 feet in No. 9 Frost; R. A. McLain's No. 6 Warren Frost, drilling at 190 feet; Parson & Bastrus were rigging up to drill No. 4 Lyle; Parson & Bastrus' No. 6 Wheat was drilling in the black shale; H. A. Kiser's No. 5 Travelstead was progressing at 280 feet; Millet & Andrus' No. 6 Walker, drilling at 222 feet; Hice & Co.'s No. 1 Smith was being started; Work & Co.'s No. 1 Douglass, drilling at 80 feet; unknown parties on the Kennedy farm were down 102 feet and drilling in their No. 1 test; Neeley, Lamp and others' No. 2 Clack was drilling below the regular pay sands at 50 feet below the shale; unknown parties were spudding in on the T. Hinton place.

The following wells were drilling in the sand and should be completed the first of the coming week; Frank Seaton's No. 3 Bert Hinton; Pennsylvania parties' No. 5 Levi Hinton; Parson & Bastrus' No. 5 Wheat, and Arthur Dye's No. 1 on the H. W. Heffington.

Warren County

The Richpond district, south of Bowling Green, furnished the only well of the week in Warren County. It is Sine, Doak & Wile's No. 3 on the H. Shannon place and it made 12 bbls. flush at 460 feet. Nine feet of pay was charged with 30 quarts of nitro. This well is three-quarters of a mile in advance of other producers on the Shannon farm.

On the famous Vance lease in the Rockfield shallow pool, the Illinois-Kentucky Oil Syndicate's No. 6 is showing for an excellent producer in the shallow lime pay at about 470 feet. It was on this property that a big gusher was drilled in two years ago filling up over 22 storage tanks before it quit flowing. The well is still producing about 8 bbls. daily. Two offsets were later drilled, both dry.

The big well recently completed on the Georgianna Davenport farm, in the Davenport Pool, is still shut in on account of lack of storage. T. A. Sheridan, owner of the well, thinks the oil is worth more in the ground at this time. Mr. Sheridan has shut down all of his drilling wells awaiting a better market price.

In the Kettle Creek district of Cumberland County, E. N. Ahlfeldt got a dry one in his third attempt on the Logan farm. It is reported A. S. McClintock's No. 1 Bud Kerr is showing for a producer at 150 feet below the Pencil Cave. If the report is authentic it makes the seventh producing sand that has produced profitably in this well. The Daniel Boone Oil Co.'s No. 1 Logan heirs which was deepened to 325 feet below the Pencil Cave is reported dry. West and associates' No. 1 Love Coe was drilling at 250 feet.

At Sulphur Creek, the recent completion of W. S. Raydure on the No. 3 Coop is pumping 3 bbls. per hour from a pay found at 178 feet below the Cave. In the same vicinity, Wilcox Brothers' No. 1 Davidson was drilling at 400 feet.

Tomilson and others' No. 1 Rush, at Otter Creek, was going ahead at 400 feet.

At Fanny's Creek, the Vedder Oil Co.'s No. 1 Doll Boles was shut down with a fishing job at 49 feet below the Pencil Cave.

Eastern Division

Lee-Owsley Counties: Five completion for the week, all producers, increasing the production of the Lee-Owsley County Field 47 bbls. per day, shows a steady advancement of oil production in this territory. The best of the quintette was the Black Gum Oil Co.'s No. 7 on the Gourley-Redman-McGuire tract, in district No. 35, rated at 20 bbls. at 1,450 feet. This same concern has two other wells on the same tract in the sand and barring accidents will drill them in the first of the week. In the same district, the Petroleum Exploration finished Nos. 12 and 13 on the Spence Flannery place for 12 and 10 bbls., respectively, from the regular Idamay pay. Hupp, Duff & Co. got a 3-bbl. pumper in No. 4 Adaline Porter at 1,447 feet. Hisey and others' No. 1 Start Treadway, 1,200 feet from the Porter, is a 2-bbl. pumper at 1,482 feet. Sand from 1,420 to 1,475 feet was shot with 115 quarts of nitro.

Ed Riggenbarten is starting a test on the Addison farm on Duck Creek. At this is 1 mile south of production at Idamay it is being watched closely. Another test that will create interest is being started on the Manis farm one-half mile to the south of the Addison.

Johnson-Magoffin Counties

In the South Weir Field, comprised of parts of Johnson and Magoffin Counties, R. G. Gillespie brought in two wells estimated at 10 bbls. each on his Sam Blanton farm in district No. 30.

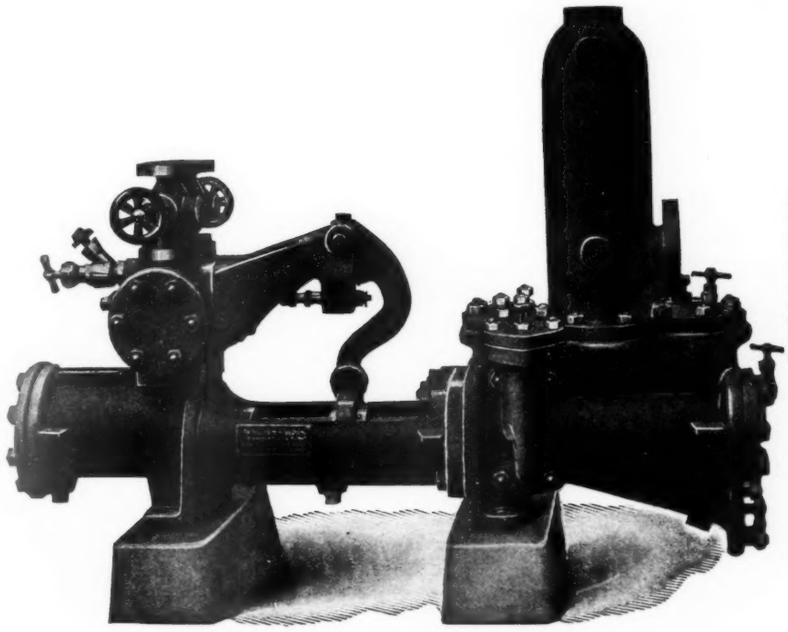
In district No. 31, C. C. Meade & Co. got a 4-bbl. pumper in No. 1 C. C. Meade.

In the Lakeville section of Magoffin County, the Petroleum Exploration's test on the William Flint was drilled to a depth of 1,253 feet without any showing of oil, however, after the test was left standing for several days, the hole filled up appreciably with oil from the Weir sand and will be shot. This company is starting a wildcat on the J. J. Howard farm at the head of Licking River, near the Knott County line.

Boyd County

Gas has been struck at Laurel Creek, Boyd County, according to a report from the well drilled in that section. A shot was put in the hole a few days ago and since then a strong pressure of gas has

(Continued on Page 62)



Bethlehem-Weir Fuel Oil Service Pump. Many of these pumps are used with installations of the Bethlehem (Dahl) Mechanical Oil Burning System.

It takes an OIL pump to handle oil satisfactorily

Bethlehem-Weir Oil Transfer Pumps

These pumps are especially designed to handle oil. Large valve areas, ample ports and passages are provided. There are few wearing parts.

Bethlehem-Weir Heavy Duty Oil Pumps

For handling large volumes of oil. Due to their large valve areas, these pumps, of the vertical type, can handle heavy oil at a lower temperature than is otherwise possible.

Bethlehem-Weir Fuel Oil Service Pumps

Of the horizontal, direct double-acting type. These pumps are used in connection with oil burning systems for forcing the oil through the burners. They can handle satisfactorily the gaseous mixtures that accumulate in the suction pipe when starting up.

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Bethlehem-Weir Oil Pumps are designed and built as OIL pumps. Their design is based on data obtained during years spent in building and testing pumps for handling oil. The design of the valves is particularly adapted for oil pumping; and the valve areas, ports and passages, being unusually large, provide for handling heavy, viscous oils.

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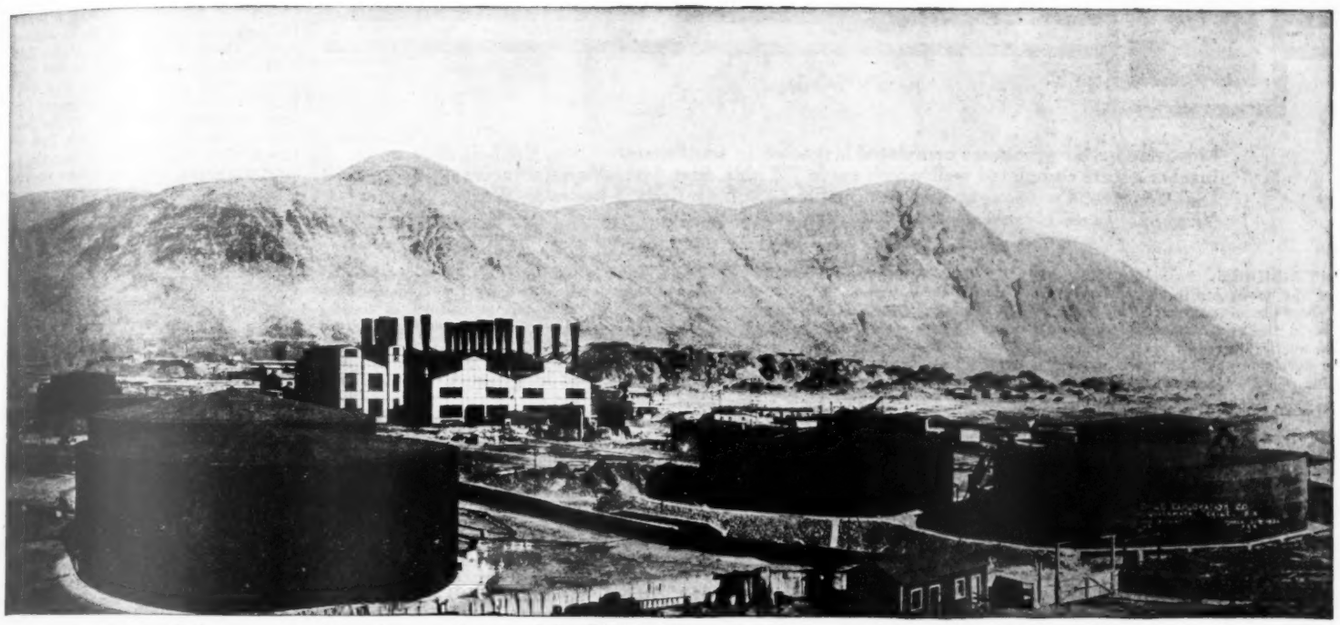
of oil fires in South America



Oil storage tanks and power house of the Chile Exploration Company at Tocopilla, Chile—where a standard Foamite *System was installed as the only adequate protection against fire.*

docks and tankers, thus have sure protection against fire. Two factors chiefly contribute to this efficiency: first, Firefoam Liquid, heart of the *Foamite* method: second, the practical knowledge of oil-fire hazards acquired by Foamite-Childs engineers by long experience in the field.

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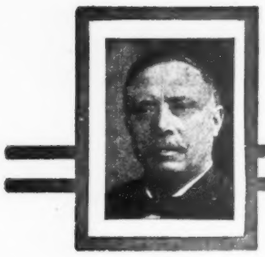


Pennsylvania-West Virginia

By D. S. Wakenight

More and better producers completed last week in southeastern Ohio. Kachelmacher estate completed well which made 132 bbls. first day. Manufacturers Light & Heat Co. brought in a well making 135 bbls. first 24 hours in West Virginia. Pennsylvania completions were gas wells.

PITTSBURGH, Pa., Dec. 8.—Operators and producers in the eastern fields are not quite so sanguine of an early advance in the market since production is again on the up grade.

In development work, more and better producers were completed during the past week. Deep and shallow sand territory in southeastern Ohio furnished the greater number. In Section 24, Ward Township, Hocking County, the Kachelmacher estate completed No. 14 on the J. J. Tracey estate. The well produced 132 bbls. the first 24 hours after drilled through and shot in the Clinton sand. In Section 2, Hopewell Township, Licking County, the Planet Oil Co. got an 80-bbl. producer when it drilled No. 3 on the W. H. Weakly farm through the Clinton sand. Holmes County had quite a number of completions. In Lot 10, Monroe Township, the East Ohio Gas Co. completed a second test on the Milton J. Lowe farm and has a 50-bbl. producer in the Clinton sand. The Ohio Fuel Gas Co.'s second test on the Oscar Korns farm, in Section 12, is a gasser good for 2,000,000 feet in the Clinton sand. This location is one-half mile east of the first test and is also showing some oil. In Lot 15, the same company's test on the B. F. Uhl farm is a gasser in the Clinton sand good for 1,000,000 feet. This location is 1,500 feet southwest of the gasser on the Oscar Korns farm. In the southeast quarter of Section 8, Pike Township, Coshocton County, the Carter Oil Co. completed and shot a test on the C. E. Moore farm. It produced 30 bbls. the ensuing 24 hours and has a strong gas pressure. This location is one-half mile west of the Pure Oil Co.'s test on the William L. Norris farm.

Shallow Sand Producer

The Pure Oil Co. got a 40-bbl. producer in the Berea grit when it completed No. 3 on the George J. Fye farm, located in Section 28, York Township, Morgan County. In Section 4, Jefferson Township, Noble County, W. M. Patton and others have drilled a second test on the Grover Hoskins farm through the Berea grit and the well is good for 5 bbls. a day. In Section 12, Center Township, John Kemp and others have drilled a test on the Wallace Kirk farm through the Buell Run sand and have a showing for a very light pumper. In Somerset Township, Belmont County, unknown parties have drilled a test on the C. Poulton farm, through the Berea grit and the well is good for 4 bbls. a day. The Simmons Oil Co. has a very light pumper in the Berea grit at a second test on the T. J. Hall farm, in Bethel Township, Monroe County. The Peoples Banking & Trust Co., in Section 16, Lawrence Township, Washington County, has a good gasser in the second Cow Run sand at No. 34 on the Edward Rake farm. In Salem Township, Waxler & Metcalf have a duster in the Macksburg 700-foot sand at No. 6 on the Jacob Gross farm. In Newport Township, the Valentine Oil Co. completed No. 7 on the Jessie Valentine heirs' farm and it is dry in the Keener sand. In Knox Township, Guernsey County, the Ohio Fuel Gas Co.'s test on the William Abbott farm is through the Niagara Lime and is dry and abandoned. This company and a local company are drilling five wells in this county to the Niagara Lime. In Lot 12, Madison Township, Licking County, W. W. & A. T. Wehrle have a very light pumper in the Berea grit at No. 6 on the Susan Parr farm. In Knox Township, Guernsey County, the Ohio Fuel Gas Co. has drilled 180 feet into the Niagara Lime at a test on the Charles Williams farm and found nothing.

Drilling Tests

In Sections 16 and 14, Madison Township, Licking County, W. W. & A. T. Wehrle are drilling tests on the Nicholas and Carl Young farms. In Newton Township, F. M. Rugg & Co. have started to drill on the Jacob Weiss farm. The Montana Oil & Gas Co. has started to drill a test on the Arthur Meyer farm in Section 10, Rush Creek Township, Fairfield County. Whitehill & Zahniser have started to drill another test on the George M. Bowers farm. In Lot 22, Franklin Township, Licking County, Ralph Brothers have started to drill on the Gideon S. Smith farm. In Knox Township, Columbiana County, the Kirk & Dunn Oil Co. is drilling on the Yaggi heirs' farm.

West Virginia Completion

After a long run of light pumpers, gassers and dry holes, the West Virginia fields have a good producer. It is the Manufacturers Light & Heat Co.'s second test on the William Knapp farm, an old well drilled down from the Big Injun to the Gordon sand. The first 24 hours after it was drilled into the lower formation it produced 135 bbls. and 110 bbls. the second 24 hours. When drilled deeper into the pay sand it is expected to increase its production. The result of drilling this well to the Gordon sand will be the incentive for drilling other Big Injun wells in that locality to the same formation.

In Union district, Doddridge County, the Clifton Oil & Gas Co. has a 20-bbl. producer in the Big Injun sand at No. 3 on the Flora Freeman farm. The Bailey Gas Co.'s test on the Hez Hashman farm, in Jefferson district, Pleasants County, is a duster in the Squaw sand. In Grant district, the Faith Oil & Gas Co.'s test on the Rebecca Graham farm is dry in the second salt sand. The same company is drilling a second test on the Hammett heirs' farm.

Ritchie County

The Hope Natural Gas Co. has completed a test on the H. P. Bartlett farm, Union district, Ritchie County, and it is dry in the Berea grit. In Union district, the Carnegie Natural Gas Co.'s test on the Creed Richards farm is good for 10 bbls. a day in the Maxon sand. In the same locality, Zinn, Brodwater & Co.'s test on the C. D. Black farm is a gasser in the Big Injun sand. On Hughes River, Clay district, the Stephens Oil Co. has made a new discovery at a second test on the Z. Darnell farm. When drilled into the Cow Run sand a dark oil was developed and the hole filled up 65 feet with fluid over the top of the tools. This location is 1,000 feet southeast of the first test. In the same district, the Carnegie Natural Gas Co.'s No. 3 on the M. H. Jones farm is a gasser in the Big Injun sand. In Grant district, C. B. Lewis & Co. have a gasser in the Berea grit at a test on the Preston Simmons farm. In Murphy district, the Southern Oil Co.'s test on the Fred Lemon heirs' tract is a gasser in the salt sand. Nothing was found in the Big Injun. In the same district, Ruth & Strong's No. 2 on the Alex Dulaney farm, an old well drilled deeper, is a gasser in the Keener sand. In Union district, Pleasants County, the Big Bend Oil Co. has a 2-bbl. pumper in the Big Injun sand at a test on the S. Colvin farm.

Kanawha County Gassers

On the water of Lens Creek, Louden district, Kanawha County, the Owens Bottle & Machine Co. have a fair gasser at No. 19 on the Great Kanawha Coal & Land Co.'s tract. In the same district, located on the same stream, the United Fuel Gas Co.'s test on the Prichard-Robson tract is a gasser in the Weir sand good for 400,000 feet a day. On Joes Creek, Sherman district, Boone County, the Pure Oil Co. has completed and shot in the Berea grit No. 24 on the Lafollette, Robson & Prichard tract, and it is good for 30 bbls. a day. On Charleys Creek, Grant district, Cabell County, the Midway City Gas Co. has a good gasser in the Berea grit at a second test on the Thomas Vance farm. On Merritt's Creek, McComas district, the Monicle Gas Co. has completed at 3,528 feet a test on the R. Schaub farm. Nothing was found but a fair gas pressure in the Gordon sand at a total depth of 3,100 feet. In the same district, located on the Guyandotte River, the Starr Petroleum Co. has started to drill a wildcat on the Walter Swann farm. The Carter Oil Co.'s test on the John Hall farm in Troy district, Gilmer County, is a gasser in the Gantz sand at a depth of 2,501 feet. In DeKalb district, the Hope Natural Gas Co. has a Big Injun sand gasser on the E. C. Gainer farm. In Center district, the same company has a gasser with some oil in the salt sand at a test on the Irvin Snider farm.

Calhoun County

The Hope Natural Gas Co.'s test on the B. B. Ferrell farm in Sheridan district, Calhoun County, is a gasser in the Big Injun sand. In Center district, Henry Eddy & Co.'s test on the Anna Dailey farm is a gasser in the same formation. In Sherman district, Miller & McIntosh have a gasser in the Big Injun sand at a test on the J. R. Godfrey farm. W. H. Bickel's No. 5 on the J. M. Bennett farm, an old well drilled down to the Big Injun sand, is a fair gasser. In Washington district, the Hope Natural Gas Co.'s test on the Joseph Knotts farm is a gasser. In the same district, the Euclid Oil Co.'s test on the P. A. Reip farm is dry in the Big Injun sand. In Curry district, Putnam County, the Commercial Gas Co. completed a gasser in the Big Injun sand at a second test on the James Bays farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has a fourth sand gasser at No. 3 on the Lindsey Burley heirs' farm. The Littleton Gas Co.'s test on the Jesse Orndoff farm, in Clay district, Wetzel County, is showing a little oil in the Gordon sand.

Drilling Operations

Located in Cove district, Doddridge County, Vanhorn & Stout have the rig completed for a test on the Conley heirs' farm. On Little Grave Creek, Union district, Marshall County, Campbell & Cole have the rig completed on the Bertha Orum farm. On the same stream, the Myers Gas Co. has a rig up on the C. N. Ramsey farm. In Clay district, Monongalia County, the Clay District Oil Co. has started to drill on the Thomas Tennent farm. On Big Run of Reedy Creek, Reedy district, Wirt County, the Heckert Oil Co. is drilling on the A. W. Thorn farm. In Proctor district, Wetzel County the Hope Construction & Refining Co. has rigs up on the H. C. Lemaster and L. Goddard farms. The Owens Bottle & Machine Co. has started to drill on the Jessie Brock farm on Paw Paw Creek, Paw Paw district, Marion County. The same company is drilling on the David Cunningham farm. On Little Paw Paw Creek, the Hope Natural Gas Co. has started to drill on the Emma Canaway farm.

Ritchie County Tests

On Hughes River, Clay district, Ritchie County, the Carnegie Natural Gas Co. is through the Gordon sand on the Alva Markle farm and the well is dry. On Whitewood run, Grant district, D. C. Reese & Co. have completed a rig on the West Virginia tract. In Union district, Purdy & Co. have a rig up on the Lee Prunty farm. In the same district, the Hope Natural Gas Co. has a rig completed on the Mary P. Bartlett farm. On Hughes River, Murphy district, the Hope Natural Gas Co. has a rig completed on the John Rymer farm. On the same river and in the same district, M. A. Dearman & Co. have a rig up on the M. A. Dearman farm. In Grant district, Pleasants County, the Faith Oil Co. is drilling on the Rebecca Ramsey farm. In the same district, Seckman & Stroble are now drilling a test on the Roy Seckman farm. The Hope Natural Gas Co. has a rig completed on the W. P. Frast farm, in Freeman's Creek district, Lewis County. On Big Run, Reedy district, Wirt County, the Heck Oil Co. has started to drill on the Sanson George farm. In the same district, Godfrey L. Cabot is drilling on the W. F. Thorne farm. On Triplett Run, Spencer district, Roane County, the Carter Oil Co. is drilling on the W. T. Craig heirs' farm. On Anna Maria Creek, Sheridan district, Calhoun County, Snyder Brothers have the rig completed on the Snyder heirs' farm. In Union district, Harrison County, the Hope Natural Gas Co. is drilling to the lower sands a second test on the A. B. Coffindaffer farm. The same company is drilling on the W. G. Bennett farm in DeKalb district, Gilmer County. In Otter district, Braxton County, the West Virginia Central Gas Co. is drilling a second test on the W. K. Bender farm. In Center district, Gilmer County, the Ohio Fuel Oil Co. is building rigs on the A. M. & Asberry Coberly farms.

Southwest Pennsylvania

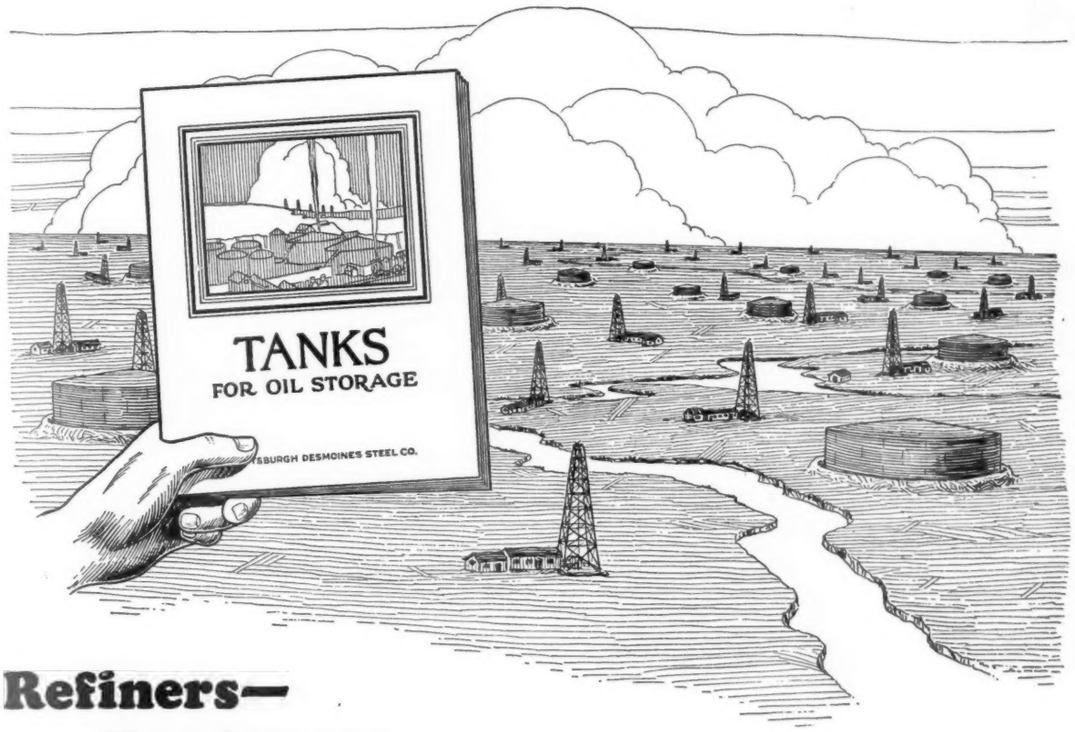
With the exception of a duster, all completions in the southwest Pennsylvania fields came in gassers. In Perry Township, Green County, the Carnegie Natural Gas Co.'s second test on the Frank Lemley farm is a gasser in the Bayard sand. In Wayne Township, the Peoples Natural Gas Co. has a gasser in the same formation at a test on the Lawrence Yager farm. In the same township, H. D. Freeland's test on the George Cumberledge farm is a Big Injun gasser. In Richhill Township, J. J. & G. W. Bounds have a gasser in the same formation at a test on the W. S. Hughes farm. In the same township, the Natural Gas Co. of West Virginia got a duster in all sands at a test on the George Stiles farm.

MRS. ELLEN GILLESPIE DIES

CHATHAM, Ont., Dec. 6.—Mrs. Ellen Gillespie, widow of the late Joseph Gillespie, died at Petrolia recently at an advanced age. She had made her home in the Canadian oil town for upwards of 50 years. W. O. Gillespie, a driller in Borneo, is a son.

ANGLO-PERSIAN IN HUNGARY

The Hungarian Government has extended Anglo-Persian Oil Co.'s exploration permit three years. Anglo-Persian has already spent $120,000 without results.



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son Township, Licking County, W. W. & gasser in the salt sand. Nothing was tha Orum farm. On the same stream, the sults.

Fields of the Central West

By Whit

J. W. Whiteside and others completed well in Wabash Township, Wabash County, Illinois, which made 390 bbls. first 24 hours from 1,478 feet. Wildcat in Gibson County, Indiana, made 14 bbls. first day. May mean extension of Princeton Pool. Well making 100 bbls. completed in old Lima Field.

FINDALY, Ohio, Dec. 8.—While the drill is not being rushed in any section of the Central West, there is more work doing than is usually the case. The only field in the Central West that failed to report a completion was the Central Ohio district, but other districts did not do much better.

One of the most interesting strikes made in the old Lima Field of northwestern Ohio for some time is now credited to McDonald Township, Hardin County. This well is a test drilled by Whipple, Ulrich and others, located 1,025 feet from the south line and 356 feet from the east line of the A. R. Zimmerman farm. Top of Trenton was found at 1,462 feet and at 8 feet in, to a total depth of 1,470 feet, the well showed 100 bbls. the first 24 hours, making it one of the best wells yet found in that area of the field. The Roundhead Oil & Gas Co. is about due to drill in its second well on the Eliza McArthur lease, in the same township, and in Marion Township, same county, the McGuffey Oil and Gas Co. is also due for completion of its test, on the J. Hinebaugh farm, Section 11, and near the town of McGuffey.

Reports from Darke County, Wayne Township, are that Fred Biel and others have a showing in the wildcat venture on the John Manier farm, Section 17, and if it proves a commercial well, will open up quite a nice extension. In Mississinewa Township, same county, J. G. Hoffman's No. 6, located 1,300 feet from the north line and 200 feet from the east line of the W. H. Long farm, in the northwest quarter of Section 16, is reported at 7 bbls. Top of Trenton at 1,235 feet and drilled 40 feet in to a total of 1,275 feet.

Defiance County is to be further tested for oil and gas. The Adams Township Gas & Oil Co., after the ending of two years in litigation, has contracted for the completion of its well to Robert Green of North Baltimore, Ohio, and it may drill two additional holes in Adams Township of that county. The original well made a very nice showing when drilled about two years ago. This is located to the north of the town of Defiance.

Other Completions

In Harris Township, Ottawa County, in the Elmore Field, O. L. Lucky's No. 4 on the southwest corner of his own farm, and close to the town of Elmore, in Section 18, produced 9 bbls. from a total depth of 1,320 feet. In Clay Township, same county, the River Oil Co.'s second well near the southeast corner of the Ernest Bushman farm, in the southeast quarter of Section 13, pumped 4 bbls. from a depth of 1,309 feet.

In Waterville Township, Lucas County, near the town of Waterville, west of Toledo, the Waterville Gas & Oil Co. drilled a small gas well in a test on the southwest corner of the U. G. Denman farm, Section 16, and in School Lot No. 7. Trenton was found at 1,114 feet and gas at 94 feet in, total depth 1,238 feet.

Old Wood County has done nicely in its last few completions, some of them above the average. The test drilled by Johnson, Hummell and others, located 600 feet from the south line and 900 feet from the east line of the Charles Gelden farm, in the northwest quarter of Section 22, is reported at 30 bbls. Top Trenton at 1,221 feet and oil 16 feet in, total depth, 1,237 feet. In Perrysburg Township, Davis & Carroll's No. 3, located 300 feet from the south line and 600 feet from the east line of the O. B. Spilker, in the northeast quarter, Section 33, pumped 40 bbls. Top of sand at 1,225 feet, oil at 29 feet in, total depth, 1,254 feet.

Near North Baltimore, in Henry Township, Wood County, H. A. Wesner and others' No. 8, on the northwest corner of the Elizabeth Blackall farm, Section 24, pumped 40 bbls. at a total depth of 1,442 feet. In Freedom Township, same county, J. Ed Matzinger's No. 7, located 800 feet from the north line and 600 feet from the west line of the Bryan Brockover farm, Section 26, pumped 15 bbls. at a total depth of 1,108 feet. In Plain Township, Virginia Perry's No. 1, located 750 feet from the south line and 200 feet from the west line of R. H. Green farm, Section 28, pumped 3 bbls. from a depth of 1,373 feet.

In Recovery Township, Mercer County, the Pennhoma Oil Co. drilled a duster at a test on the B. Dues farm, Section 1. In Butler Township, sme county, Defenbaugh and others' No. 2, located 1,000 feet from the south line and 400 feet from the west line of the E. Snyder farm, in the southwest quarter of Section 16, is reported good for 3,500,000 feet of gas at the shallow depth of 574 feet, and in what is supposed to be the Niagara Lime. This is the second gas well on this farm, at the same depth, but No. 1 was reported at 4,000,000 feet. The staying qualities of this shallow gas remains to be seen, as usually the production dwindles rapidly. The finds are nevertheless important.

In Dublin Township, same county, J. G. Cochran's test on the W. W. Shaffer farm, Section 1, is reported at 18 bbls.

In York Township, Van Wert County, W. H. Young's second well, located 1,000 feet from the south line and 250 from the east line of the A. J. Haight farm, in the northeast quarter of Section 21, pumped 10 bbls.

In Harrison Township, Paulding County, the Aetna Drilling Co.'s No. 3, near the southwest corner of the Thomas Lamb farm, Section 34, and in the northwest quarter, is said to be good for 20 bbls. at a total depth of 1,431 feet.

New Work Started

In Spencer Township, Allen County, W. W. Rock is drilling No. 3 Ann Youngpeter farm, Section 23. In Bath Township, Conway, Botkins and others are drilling No. 5 on the Eliza Youngkenan farm, Section 2.

In Moulton Township, Auglaize County, W. B. Jack is drilling No. 1 Grant Tester farm, Section 33, and west of Wapakonetta, and the Neely-Clover Oil Co. is drilling No. 2 John Rapp farm, Section 34. In Salem Township, the Drake Oil Co. is drilling a test on the W. E. Miller farm, Section 34, and in Logan Township, E. O. Loeber is drilling a test on the Charles McPherson farm, Section 6.

In Gibson Township, Mercer County, W. Klingshirn is drilling a test on his own farm, Section 33. In Butler Township, same county, Defenbaugh and others are drilling No. 3 on the E. Snyder farm, Section 16. In Granville Township, P. Shilling is drilling a test on the J. B. Brunswick farm, Section 20, and in Washington Township, Callaham & Mayhue are at work on a wildcat on the Florence heirs' farm, Section 25.

In Harrison Township, Paulding County, the U. S. A. Oil Co. is drilling No. 2 A. M. Bailey farm, Section 34, and the Aetna Drilling Co. is drilling No. 1 A. N. Miller land, same section. In Brown Township, Ernest E. Johnson is drilling a second test on the Roger L. Dill & Co.'s farm, Section 30, and in the eastern portion of the county, near Melrose.

Abandoned Wells

More than 30 old wells have been reported abandoned in Allen, Mercer and Van Wert Counties of the Lima Field.

In Marion Township, Allen County, Mack P. Colt abandoned Nos. 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, and 37, M. L. Bowyer farm, Section 13. In Amanda Township, W. L. Parmenter did the same with Nos. 5 and 6 W. & S. A. Lutz farm, Section 19. In Bath Township, C. A. Peavey and others pulled out Nos. 5 and 6 Elias Lewis farm, Section 10, and Conway, Botkins and others abandoned Nos. 1 and 2 H. L. Solomon farm, Section 10.

In Union Township, Mercer County, the Ohio Oil Co. abandoned old No. 3 well on the Scott Hays farm, Section 13.

In Willshire Township, Van Wert County, W. C. McCray abandoned Nos. 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 18, and 19 Frederick Lillich farm, Section 25.

Indiana

The most important of the late finds in the southwestern Indiana fields, in what is known as the Princeton district, is the wildcat well drilled by Nelson Brothers, located 1,520 feet from the north line and 1,050 feet from the west line of the H. Raiborn farm, in the northeast quarter of Section 8, Barton Township, Gibson County. The well's production the first 24 hours amounted to 14 bbls. and while not large, it shows that oil exists there, with possibilities of an extension to the Princeton Field, or a new pool will be uncovered. In Center Township, same county, J. H. Young and others are working on a test on the August Black farm, Section 36.

In the Trenton Rock Section of the Indiana Field, in Penn Township, Jay County, the Amber Oil Producing Co.'s No. 3 on the N. Thomas farm, Section 2, near Balbec, pumped 10 bbls. Burnett, Trusler and others drilled a dry hole in No. 1 L. B. Craig farm, Section 13. This was on old gas well that was drilled deeper, without results. The American Engineering Co. is drilling a test on the James Sutton farm, Section 16, same township, and also in the vicinity of Balbec.

There is some talk of work starting up in the Hotmire Pool, located along the line of Jay and Randolph Counties. This has been the most productive spot in Indiana for the past three years and there is still room for extensions.

Illinois

The big well of the week in the Central West area was developed in Illinois Field, being J. W. Whiteside and others' No. 1, located 600 feet from the north line and 350 feet from the east line of the C. E. Courter farm, in the southwest quarter of Section 24, Wabash Township, Wabash County, which showed a production of 390 bbls. at a depth of 1,478 feet. This well is located 1½ miles south and a short distance east of Allendale, and almost due west from the good well on the Winters farm, and several locations southeast from the well drilled by Wirebaugh and others on the southeast corner of the Clara Adams farm, same section, that found a 20-bbl. production in the Bridgeport sand at 1,084 feet. Offsetting the Adams well to the east and on the southwest corner of the Clara Armstrong farm, a dry hole was drilled recently by Price and others' which indicates that no location can be depended upon for a producer. To the south about 1 mile is a good well on the Lovilah Chapman farm, Section 25, and productive wells are found where least expected and dry holes discovered where expectations were for big producers. That is the history of the Wabash County Field at its best.

In this same field, Timberlake and others are drilling No. 1 on the William Stillwell farm, Section 21. Wirebaugh and others are drilling No. 1 L. Lidale farm, Section 15, and No. 1 H. A. Price farm, Section 23, and J. W. Whiteside and others have a rig in for No. 2 on the Howard Armstrong farm, Section 24.

The outcome of the test being made by George Danvers on the N. Cunningham farm, Section 23, Smallwood Township, Jasper County, is being watched with interest. In Dennison Township, Lawrence County, Curtis and others are working on No. 1 on the H. A. Seed farm, Section 21.

CALIFORNIA STANDARD HAS HOPEFUL OUTLOOK

SAN FRANCISCO, Dec. 6.—Standard Oil Co. of California, discussing the oil industry in California, says:

"The future may be looked upon with equanimity and the past with satisfaction. Production of crude has been phenomenal during the past few years. Consumption of petroleum products, although not of course balancing the extraordinary production of crude, has steadily advanced, breaking record after record. Prices of crude and products have suffered in natural consequence of the condition of overproduction, but better things may be expected in the future.

"The oil industry of California may well be satisfied with its achievements of the last two years. It has undergone a tremendous strain and has carried an enormous burden, but without cracking and without weakening. It is doubtful if there is any industry in the country that could go through such a crisis with less damage. From what now seems to be the commencement of a more pleasurable and profitable business period, a glance backward reveals that California has already made a skillful and rather heroic voyage through troublous waters.

"This company, maintaining marketing facilities and personnel in California, Washington, Nevada, Arizona, Oregon, Alaska and Hawaii, may be said to have its hand on the business pulse of this region. While the company cannot take the role of prophet—something never done in the oil business—the future seems extraordinarily gratifying and bright."

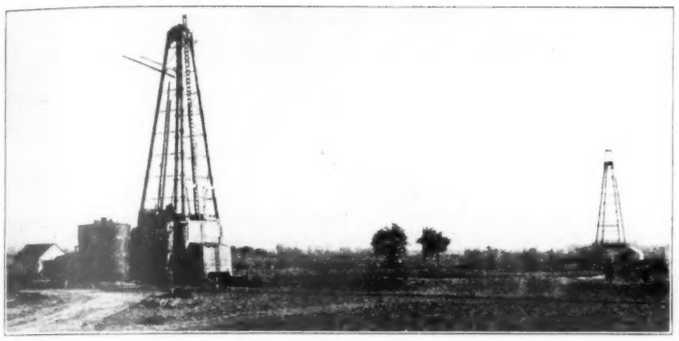
SHELL-UNION OUT OF COLORADO

DENVER, Dec. 6.—Matador Petroleum Co., subsidary of Shell-Union Oil Corp., has closed its Denver offices and moved back to Texas. When the oil excitement broke in Colorado last spring, the company for the second time sent scouts and geologists into the State, but did not undertake drilling. It originally had leases on Wellington Dome and drilled a test on the section upon which the Union Oil of California gasser is located, but stopped in a shallow sand. It also drilled a shallow-sand test on Berthoud Dome, where Midwest is now testing the lower formations.

TENNESSEE WILDCAT

John D. Richards of Tulsa and W. R. Miller and others are drilling at 635 feet in a test located on the M. A. Gaulin farm, 3 miles northeast of Trimble in Obio County, Tennessee, according to Mr. Richards. He states a show of oil and gas was encountered at 274 feet.

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



Thomas B. Slick's Carson well in Cowley County, Kansas. The tank in the foreground is a Perfection. There are six others not shown in the picture.

DISTRIBUTION POINTS

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Perfection Tanks and Discovery Wells

PERFECTION tanks are almost synonymous words with discovery wells.

For usually when a wildcat test comes in an oiler, there is a battery of Perfection tanks erected in a jiffy.

That's possible because our distribution is almost nation-wide through our own branch offices and supply depots. Our men are ever on the job at your call.

The new Carson well in Cowley County, Kansas, owned by Thomas B. Slick, which apparently has opened up a new field is an example. The seven tanks taking care of the production from the new well are all Perfections.

But immediate service is only one of our claims for distinction.

Perfection tanks are as good mechanically as it's humanly possible to make them. They are manufactured of best rust-resisting steel obtainable, evaporation proof and pay for themselves in a short time.

You had better get in touch with one of our branch offices today.

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BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

MEN KNOWN IN OILDOM

E. A. Landreth

When the Phillips Petroleum Company of Bartlesville, Okla., purchased the natural gasoline plant of the Landreth Gasoline Company in the Ibex Pool of Shackelford County, Texas, one of the largest gasoline plants in the Lone Star State, and one of the most modern and up-to-date in the Mid-Continent fields, with an average daily production of 37,500 gallons changed hands. The man behind the development of this property and who was responsible for building it up to its high position in the industry was E. A. Landreth, better known as "Ed," president and general manager of the Associated Landreth Companies, comprising the Landreth Gasoline Company, the Landreth Production Corporation and the Landreth Gas Company. The properties of the second named company comprised 2,000 acres of proven territory and 19 producing wells in the Ibex Pool, all of which was included in the deal mentioned above.

Mr. Landreth was born in Illinois in 1891 and was educated in the public schools of Joplin, Mo. He has been secretary of the Landreth Machinery Company of Joplin since 1912 and entered the oil business in 1919, going first to Ranger, Texas, and later to Breckenridge, where he has since made his home.

As a recognition of his achievements and service to the industry Mr. Landreth was recently elected to the directorate of the Natural Gasoline Manufacturers Association.

PERSONAL PARAGRAPHS

W. J. Hussey and son Eric have returned to Petrolia, Ont., from Mexico.

* * *

O. L. Thomas and C. M. Daniels, of Casper, Wyo., left for New York City recently for the National Supply Company.

* * *

P. C. Crenshaw, former president and organizer of the Home Oil Company of Chicago, is planning a tour round the world.

* * *

Capt. J. L. Lucey, independent operator, was in Wichita Falls, Tex., several days last week looking after his interests in that district.

* * *

D. G. Gray, of Houston, Tex., chief accountant for the Texas Pipe Line Company, spent his Thanksgiving holiday in the vicinity of Wichita Falls.

* * *

H. A. Melat chief of the producing division of the Gulf Production Company, has returned to Fort Worth, Tex., after a brief trip to the northern part of the State.

David McCalmont, Franklin, Pa., prominent Venango County oil producer, spent a few days in Pittsburgh last week.

* * *

Harry F. Sinclair and a group of Eastern oil men arrived in Tulsa last week on a trip through the Mid-Continent fields, inspecting properties of the Sinclair companies.

* * *

A. H. Culver, head of the land and lease department of The Texas Company, with headquarters in Houston, Tex., spent a few days last week in the Wichita Falls district.

* * *

H. W. Bell has been reappointed chief of the mineral division, including oil and gas departments, of the State of Louisiana by the Louisiana State Conservation Commission.

* * *

W. L. Caprou, of the Sinclair Crude Oil Purchasing Company, Tulsa, spent several days in the Salt Creek Field and other Wyoming areas recently looking over the production situation.

* * *

Poe Greer has resigned his position as scout for the Simms Oil Company in the Wichita Falls, Tex., district to join the force in the land department of the Roxana Petroleum Corporation in Wichita Falls.

* * *

R. A. Giefly, who has been representing the Reed Roller Bit Company of Houston, Tex., in the Luling Field, has been transferred to Wortham, Texas. He has been succeeded by Reed O'Niell of Houston at Luling.

* * *

Seward Lyon, formerly scout for the Roxana Petroleum Corporation in the Okmulgee, Okla., district, has been transferred to Independence, Kans., where he will take charge of the company's land office which has just been opened.

* * *

J. R. Trisler, president of the Imperial Oil Marketing Company, of Tulsa, made a business trip to Little Rock, Ark., last week. R. M. Moon, vice president of the same concern, was also away from Tulsa on business in Fort Worth, Tex.

* * *

W. K. White, a former operator in the Trenton Rock Field in Ohio, now a resident of Hollywood, Calif., visited friends in Toledo last week. It was learned he has secured acreage in Green County, Kentucky, and has started drilling there.

* * *

Peter Q. Nyce, who is now associated with Senator Chamberlain of Montana in Washington, D. C., in private law practice, visited the Great Falls, Mont., region recently. He was formerly connected with the Carter Oil Company in that part of the country.

* * *

A. B. Patterson and H. A. Stewart of Denver, Colo., general superintendent and chief geologist respectively, of the Texas Production Company, made a trip to Casper, Wyo., and vicinity recently to check up on the company's production and other interests.

* * *

C. P. Watson, of the New York office of the Amerada Petroleum Corporation, was looking over some of the company's properties in the Mid-Continent last week. Mr. Watson has had a varied experience in the oil business, having spent considerable time in the Mexican fields.

* * *

J. W. Van Dyke, president of the Atlantic Refining Co., with W. M. Irish, vice president; E. J. Henry, assistant secretary; Albert Hill, treasurer; E. H. Blum, general manager of the southern division, were visitors at the Mid-Continent offices of the Atlantic Oil Producing Co. last week.

* * *

Harry Hughes, sales manager of the Barnsdall Refining Company, delayed his vacation until hunting season in Old Mexico reached its height. He left Tulsa last week for the mountains of Mexico with the expressed intention of bagging some big game and forgetting all about oil for a month.

* * *

A letter from Michael Spellacy, well known pioneer oil operator in the California and Mexican fields and one of four brothers to help make oil history in the Eastern fields, states he is in New York and preparing to return to Colombia, S. A. Mr. Spellacy, who is 67 years old, has spent five years in South America and is seeking a concession from the Colombian Government.

* * *

The action of the Prairie Oil & Gas Company in opening a geological office at Tulsa with R. M. Gawthrop, former chief geologist of the Transcontinental Oil Company, in charge, is regarded by most observers as a striking tribute to the value of this science in the search for oil. Mr. Gawthrop will be assisted by W. D. Miller.

* * *

Leo Teyssot, representative of the Societe de Napthe Limanova, Paris, France, has left Tulsa for Los Angeles, where he will spend a month in a tour of California fields. He intends to return to the center of Mid-Continent activities at the end of that time, and complete the study of conditions to which he has already devoted two months.

* * *

C. W. Hughes, formerly petroleum engineer with the Freeborn Engineering Company of Tulsa, has been placed in charge of the engineering department of Crockett, Couchman & Crawford, accountants and engineers. Mr. Hughes has specialized in valuation and depletion work on oil and gas properties in the Mid-Continent for a number of years.

* * *

A. E. Fath, chief geologist of the Vacuum Oil Company, with headquarters in New York City, was in Tulsa last week on a trip through the Mid-Continent. While with the Government, before entering the service of the Vacuum Oil Company, Mr. Fath mapped the Catfish Creek anticline near Bristow, Okla.

* * *

Notice of a change in the management of the Banner Refining Company of Los Angeles is contained in an announcement from the board of directors of the company. D. Edward Collins is the new president and Frank H. Klauser the new secretary. New members added to the directorate are: D. Edward Collins, Col. P. R. Smith, Frank H. Klauser and C. O. Mulder. Boswell F. King has been retained as legal adviser General offices of the company have been removed to 505-6 Kohl Building, Los Angeles.

* * *

Dr. W. F. McNalley, inspecting physician of the Carter Oil Company for the Mid-Continent and Rocky Mountain fields, was in Casper, Wyo., and visited the Carter Oil Company's camps recently. The Carter Oil Company maintains a medical staff to look after the sanitation of the camps and the health of employes. With Dr. McNalley on his trip was W. T. Funk of Denver who is in charge of the field operations of the Carter Oil Company and the Standard Oil Company of New Jersey in the Rocky Mountain region.

* * *

C. R. Aubrey, formerly of the land department of the Roxana Petroleum Corporation and with the Standard Oil Company and the Ohio Cities Company, has been appointed superintendent of the Plateau Oil Company of San Antonio and is to direct field work for the company in Live Oak, Uvalde and Caldwell counties. The company is starting a test near Dale in Caldwell County on the Stephen Goodman survey. It is to start drilling soon on the Schleicher ranch in the southern part of Live Oak County. It is drilling on the Kincaid ranch in Uvalde County and at Lavernia in San Patricio County.

* * *

A party made up of Leonard L. Leonard, Southwest district manager of Tide Water Oil Sales Corporation, and several of his distributors have just returned to the Southwest after a week's visit to the home office of the company, 11 Broadway, New York. While in the East they met the executives of the company and visited the Tide Water refinery at Bayonne, N. J. In the party were E. E. Phillips, vice president in charge of marketing, and Fred Cordell, general superintendent in the marketing division of the Waite Phillips Co., Tulsa; A. D. Tillman, retail manager of the Caddo Central Oil & Refining Corp., Shreveport; R. E. Megee, manager of Veedol department, Auto Dealers' Supply Co., San Antonio; R. Aprill, sales manager, Joseph Schwartz Co., Inc., New Orleans; L. L. Boardman, manager Boardman Oil Co., Wichita Falls, and L. T. Carlson, Mr. Leonard's star salesman in 1924.

A TWIST OF THE WRIST ACCOMPLISHES THIS

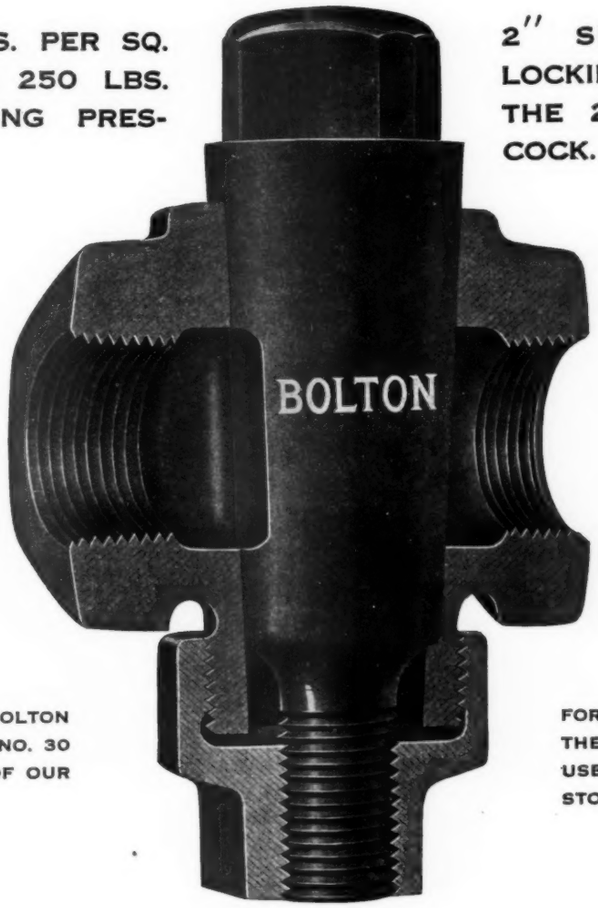
IF THE PLUG STICKS- A SLIGHT TURN OF THE NUT, TO THE LEFT, ACTUALLY LIFTS THE PLUG FROM ITS SEAT.

IF THE COCK LEAKS- TURNING THE NUT TO THE RIGHT DRAWS THE PLUG DOWN INTO THE BODY.

TESTED AT 700 LBS. PER SQ. IN.; SUITABLE FOR 250 LBS. PER SQ. IN. WORKING PRESSURE.

2″ SIZE NOW MADE WITH LOCKING DEVICE; KNOWN AS THE 2″ BOLTON LOCK STOP COCK.

"OILWELL" ESTD. 1862. TRADE MARK. (REGISTERED)



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WRITE FOR "OILWELL" BOLTON IRON STOP COCK BULLETIN NO. 30 —OR GET A COPY AT ANY OF OUR 100 BRANCHES.

FOR SAFETY, CONTINUOUS SERVICE, AND THE ELIMINATION OF REPLACEMENTS, USE THE "OILWELL" BOLTON IRON STOP COCK.

THE "OILWELL" BOLTON IRON STOP COCK

OIL WELL SUPPLY CO.

OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

PITTSBURGH

LONDON SAN FRANCISCO NEW YORK LOS ANGELES TAMPICO

NATURAL GAS DEVELOPMENTS

GAS RAISE PROTESTS HEARD AT PITTSBURGH

PITTSBURGH, Pa., Dec. 6.—Hearings on the protests of city officials and organizations in Pittsburgh and Southwestern Pennsylvania against a proposed 20 per cent increase in the price of natural gas by seven public utilities companies have been held here by the State Public Service Commission. The protests allege the proposed increase in rates is "unjust and unreasonable." Action on the application of the utilities companies to increase the rates is being withheld by the commission pending the result of the hearings.

A delegation of city officials, headed by Mayor William A. Magee, and representatives of the companies inspected several gas fields in Pennsylvania and West Virginia in September in connection with the case.

The companies seeking to raise the rates are the Equitable Gas Co., Peoples Natural Gas Co., Allegheny Heating Co., Monogahela Natural Gas Co., Manufacturers' Light & Heat Co., Johnston Fuel and Supply Co. and the Greensboro Gas Co.

The protests against the Peoples Natural Gas Co. were made by the city of Pittsburgh, Allied Boards of Trade of Allegheny County, borough of Clairton, borough of Glassport, city of Johnstown, city of Altoona, borough of West Elizabeth, borough of Elizabeth and individuals and associations.

The protests against the Equitable Gas Co. were lodged by the city of Pittsburgh, city of McKeesport and Homestead District Chamber of Commerce, borough of Port Vue and various public bodies.

Mayor Cauffiel of Johnstown and Louis Franks made protests against the Johnstown Fuel & Supply Co.

The protests against the Allegheny Heating Co. and the Monongahela Natural Gas Co. were made by the city of Pittsburgh.

The city of Pittsburgh and the borough of Ben Avon protested against the Manufacturers Light & Heat Co.

Protests against the Greensboro Gas Co. were made by the boroughs of Jeannette, Irwin, Penn, Donora, North Charleroi, Elco, Stockdale, Smithton and Roscoe, and the Charleroi Chamber of Commerce and others.

WOMAN OWNER SELLS ANADARKO GAS COMPANY

ANADARKO, Okla., Dec. 6.—The Cement Gas & Fuel Co. of Cement, has purchased the Anadarko Gas Co. T. Woods will manage the new company which will continue under the old name.

R. B. Crawford, president of the Cement Gas & Fuel Co., and the board of directors have been in Anadarko investigating needed improvements.

The Anadarko Gas Co. was established in 1922 as the Anadarko Producers' Oil & Gas Co. with a capital stock of $150,000 and C. V. Thompson as president and manager. In May, 1923, Mrs. Marjorie Thompson purchased the company and reorganized it under the corporate name of the Anadarko Gas Co. with a capital stock of $150,000. Since her purchase of the company, Mrs. Thompson has been active manager until the date of sale.

BUYS GAS HOLDINGS

A large deal has been consummated in natural gas properties in the areas of northwestern Ohio and approved by the State Utilities Commission. The West Ohio Gas Co., formerly the Ohio Western Gas Co., is taking over the properties and assets of the Lima Gas Light Co., Lima Natural Gas Co., the Wapakonetta Gas Co., the Celina Gas Co., and the St. Marys Gas Co. The total purchase price as announced amounts to $3,126,230.

CUSTOMER OWNERSHIP

CHATHAM, Ont., Dec. 6.—Following authorization of an issue of 6 per cent cumulative preferred stock, the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary is introducing the principle of customer ownership of its shares, the first company of its kind in western Canada to do so.

A published statement of the company shows that the new Foremost Field in southern Alberta, has recently been connected with the company's main lines. An aggregate of 55,000,000 feet a day open flow is now available for the company from the Foremost, Okotoks, Bow Island and Barnwell Fields. The company has been supplying gas since July 17, 1912, the communities served including Calgary, Lethbridge, Okotoks, Macleod, Nanton, Claresholm, Granum and Brooks. The company's system serves a territory of more than 220 miles and a population of approximately 90,000, the system and properties including 254 miles of main trunk lines, 18 miles of field lines, 155 miles of distribution, 223 miles of private telephone lines and 19 producing gas wells, with a cash investment of approximately $7,000,000.

LIFE OF QUINTON FIELD

The probable life of the Quinton, Okla., gas field was one of the main points at issue in the hearing before the Oklahoma Corporation Commission of the application of the McAlester Gas & Coke Co. for increased rates on gas at McAlester. H. G. Snyder, attorney for the company, stated that the company believes the field is rapidly approaching its death and that when the gas supply is exhausted the company will be compelled to convert its plant into an artificial gas plant.

NEW SUPPLY OF GAS BY DEEPER DRILLING

PITTSBURGH, Pa., Dec. 6.—Further details are at hand regarding the deepest producing gas well in the world recently completed in unexplored sands under Chestnut Ridge, near Ligonier, Pa., where the Peoples Natural Gas Co. uncovered a supply of natural gas.

The pay sand was struck at a depth of 1 4-10 miles. The well is known as No. 2 Booth & Flinn. Thirty-one months of day and night drilling, begun on April 5, 1922, were required and $150,000 was invested in prospecting for the new fuel supply. The well is estimated at 200,000 feet of gas a day. The rock pressure is estimated at 3,700 pounds per square inch, compared with the average pressure of 240 pounds in ordinary drilling.

Drilling to such extraordinary depths was prompted by the efforts of the company to find fresh supplies of fuel for its consumers after it had become evident that the present known gas-bearing sands were being depleted, it was explained by John B. Tonkin, vice president and general manager of the Peoples Natural Gas Co.

No. 2 is the third deepest drilling operation in the Ligonier section. Another was drilled during 1919 and 1920, reaching down almost 1⅓ miles, or 6,822 feet. Production is now 160,000 feet daily although gas first came at the rate of 450,000 feet. In referring to these two wells, Mr. Tonkin said:

Previous Deep Tests

"This new deep well and the one completed in 1920, while not large, have fully justified our faith that we might find a new supply of natural gas by deep drilling.

"The well known gas seams in the Pennsylvania and West Virginia fields have been pretty well known and explored for the past 35 or 40 years and the drainage has been known to have been going on for that time. On this account, our company has been making extraordinary efforts to develop a surce of supply in a virgin sand at greater depths.

"About 1913 we drilled a well on the Geary farm, near McDonald, Washington County, at a depth of 7,248 feet and found what was believed to be the Oriskany sand, but it was unproductive and flooded with salt water.

"In March, 1919, we commenced a well on the Booth & Flinn tract, the location having been selected by Dr. I. C. White, State Geologist of West Virginia for the past 25 years, and completed a year later at 6,822 feet in what is probably the Oriskany sand. The well for a while produced about 450,000 feet of gas and at the present time is delivering about 160,000 feet.

"A deep well was then started on the Seger Brothers' tract, 4,500 feet northwest, which from almost the start had a crooked hole and which a number of times was straightened only to again give trouble by going crooked. After working on this well for about four years we decided to give up the attempt as the formation was such that we believed we were wasting money in trying to reach the gas sands. We are now abandoning this well, which at one time reached a depth of 6,980 feet.

"The new well, No. 2, on the Booth & Flinn tract, was located only 515 feet from the producing well. It encountered the same sand at about 6,807 feet. The sand proved to be 260 feet thick, but the formation was so hard that it seemed gas could not penetrate and we then decided to go deeper, finally reaching gas at 7,430 feet in what is probably the Stormville or Coeymans sand."

Establishes Records

No. 2 holds the world's record for drilling in more than one way. It has considerably more than 1 mile of solidly welded casing 5 inches in diameter by ½-inch thick. The exact length is 6,800 feet and about 78 tons of steel were required to make it. This is three times longer than the average casing.

The United States Geological Survey developed interesting information in the process of drilling. Temperature tests were taken at various stages which showed the various strata to be considerably warmer as the well proceeded to the earth's center. At 1,000 feet the temperature was 63 degrees, 78 at 2,000 feet, 93 at 3,000 feet, 107.8 at 4,000 feet, 127.4 at 5,000 feet, 148 at 6,000 feet, 158 at 6,500 feet and 166.1 at 6,760 feet when the readings ceased.

According to Dr. C. E. Van Ostrand, physical geologist of the United States Geological Survey, these temperature tests indicated the various formations to be in such a position that it was conclusive that at some time a great force exerted from the East had tilted the mountains of Chestnut Ridge considerably west.

The sands encountered from time to time were declared to be the hardest ever drilled into. Samples of the Oriskany sand, which was the last hard formation pierced, were brought to the surface and they were found to cut glass. About 25 minutes was the life of the end of the drill bit when drilling in this sand. Bits last from six to eight hours in ordinary drilling. Progress through the Oriskany sand was exceedingly slow. Toward the last 1 foot a day was considered good speed.

Another interesting geological fact uncovered in connection with the well was that the disturbance that probably tilted Chestnut Ridge at the same time pushed the Pittsburgh coal vein to a height about 1,600 feet above the present earth's surface. The fact that erosion has eaten away the coal then pushed to the earth's surface and about 1,600 feet of formation under it is an indication of the inestimable number of years ago the disturbance occurred.

POSSIBILITIES OF ONTARIO TOLD TO CANADIAN OIL AND GAS MEN

By E. P. Rowe

Petroleum Geologist, Before Convention of the Natural Gas & Petroleum Association of Canada at Hamilton, Ont.

In half a century of oil development in southwestern Ontario, not 50 wells have been properly drilled to test the Trenton formation. The amount of drilling that has been done, has proven beyond question that oil and gas accumulations are to be found in Ontario over widely separated territory, in the Trenton formation from Lake Erie to Georgian Bay.

In 1899 I located an anticline in Bruce County near Hepworth, and drilled the first well in that territory. This well found the top of the Trenton at 1,050 feet and after passing through a hard "capping" of cherty limestone at 1,421 feet produced by open flow over 500,000 feet of gas. The second well was drilled about 1,000 feet west of No. 1 and found the top of the Trenton about 18 feet higher, and produced 750,000 feet of gas beneath the same "cap rock". The original rock pressure in this field was 440 pounds per square inch. The field is still producing gas, and I do not think the major portion of the field has yet been drilled. This field is over 120 miles from the Dover Trenton Rock Field. The area between these points offers a large field for exploration. The westerly dip into the Great Michigan Basin forms an immense gathering area from which the migratory waters carry the oil and gas accumulations in the porous measures up the dip only to be trapped by changes of dip, terracing, folding or faulting; such minor structures in porous formations thus forming the natural reservoirs for these products.

In drilling "wildcat" wells into the Trenton formation too great care cannot be exercised in examining the cuttings and keeping the records. The porosity of the Trenton is so lacking in uniformity that, with the few wells drilled, at such wide intervals, it is little wonder that we have not yet disclosed any large reservoirs in this formation in Ontario. The drill holes seldom exceed 6¼ inches in diameter, and the operators seldom make the most of these by using a torpedo to shatter the rock, as is almost invariably done in making Trenton tests in Ohio and Indiana. Many otherwise unproductive wells have been brought into large production in the United States by means of a torpedo. In my opinion, no Trenton test should be considered complete without a shot.

Good Prospects

There are many sections of southwestern Ontario where there are excellent prospects of developing profitable production of both gas and oil from the (Corniferous), Onondaga, Salina, Guelph Dolomite, Niagara, Clinton and Medina sands. Any Trenton test when properly conducted by the use of a sufficient number of strings of casing becomes at once a test of all these younger formations.

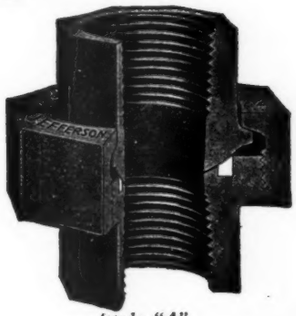
Owing to the general lack of rock outcroppings throughout southwestern Ontario it is impossible to determine just

(Continued on Page 120)

Jefferson

Unions and Flanges

Style "D"



Style "A"

Style "B"

Note Their Ground-Ball, Brass-to Iron Joints —Absolutely Tight

The Jefferson Union Company set out to make *perfect* Unions and Flanges,—and users tell us they have succeeded.

All "Jeffersons" possess ground-ball joints, which permit adjusting when pipe is out of alignment. All are ground together in pairs and never separated afterwards.

All possess the brass-to-iron feature, preventing corrosion—and the brass ring is set away from the runway where it cannot be dislodged no matter how far the pipe is screwed into the fitting.

You can't go wrong if you order "JEFFERSONS."

"Be Sure It's a Jefferson"

"Look for the Name on the Nut"

QUALITY SERVICE PRICE

"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY
General Offices: St. Louis
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MORE THAN 70 STORES IN THE OIL COUNTRY

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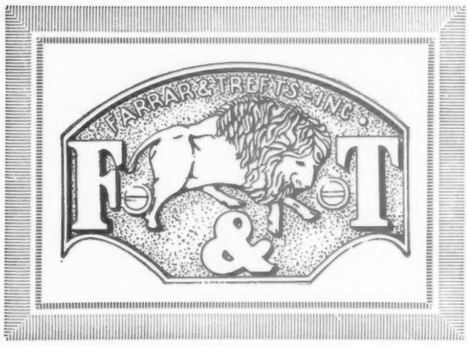
CONTINENTAL



Symbolical of QUALITY in Oil Field Boilers

Sixty-one years of experience building boilers, meeting the requirements of the most exacting users and always conforming with regulations is the accomplishment of this company.

They have always led —others follow.

D. F. Connolly Agency, Inc.

Agents West of the Mississippi
623-24 Kennedy Bldg., Tulsa, Okla.
Phone 2-1929 Night Phone 3-2798
Long Distance 193

Broderick & Bascom Wire Rope
Mechanical Rubber Goods
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Beaumont, Texas—Brooks Supply Co.
El Dorado, Kansas—Oil Field Specialties Co.
Fort Worth, Texas—Longhart Supply Co.,
608 First Nat'l Bank Bldg.
Louisiana, Arkansas and Houston, Texas—
Petroleum Supply Co.

RESEARCH WORK BEING CONDUCTED ON PROBLEMS OF OIL INDUSTRY

The Petroleum Division of the American Chemical Society, of which Dr. G. A. Burrell is secretary, is requesting various members and organizations for information regarding the research work in petroleum they are doing at various laboratories. A summary of some of the responses received has just been made by Dr. Burrell and follows:

The Kansas City Testing Laboratory, Dr. Roy Cross in charge, is devoting the greater part of its research work on petroleum to improving the efficiency of fractionating, to the removal of sulphur from gasoline and the bleaching of gasoline and other oils. It has also made, during the past year, occasional engine tests to determine anti detonating as well as other properties of gasolines, including completeness of combustion under standardized conditions.

The Petroleum Laboratories of the Massachusetts Institute of Technology, Messrs. Haslam and Barnard in charge, have had under investigation for the past year, the following problems:

Lubrication

The primary purpose of this work was a study of the mechanism of lubrication under conditions of both a complete "fluid film" and of rubbing contact. The results obtained may be briefly summarized as follows:

(a) An experimental machine for investigating the friction characteristics of journal bearings has been developed.

(b) The conditions under which fluid film lubrication may be realized in a complete bearing have been determined. This work included a study of the effects of clearance, load, speed, viscosity and oiliness on the transition from fluid film lubrication with metallic contact. It was found that oiliness, as measured by observations of friction under static conditions, exerts little or no effect on the point at which the oil film ruptures.

(c) Under conditions such that a fluid film could not be maintained (rubbing contact) it was possible to secure reductions in friction as high as 60-70 per cent by sufficiently increasing the oiliness of the lubricant.

(d) A certain amount of work has been done toward the development of a machine for studying the effect of oiliness and bearing metal composition on rate of wear. This work has been in a large measure successful, but cannot as yet be said to be complete.

(e) Investigations were conducted for the purpose of studying the effect of crankcase dilution on engine wear. While of itself inconclusive, this work indicates that the "danger line" under the conditions existing comes at dilutions of 10-15 per cent.

Deterioration of Oils

The problem of the deterioration of oils during service is being investigated. It is considered that the reaction which takes place is due to oxidation of the oil or a portion of it.

An examination of sludge-time and acidity-time curves reveals the fact that the reaction does not proceed at a constant rate, but start very slowly and works to an abrupt maximum approximately half way through the reaction, thence falling gradually off to zero rate. Such results clearly indicate some kind of autocatalytic reaction, and an endeavor is being made to determine the actual mechanism involved. The method employed is a periodical determination of the sludge and a comparison of the figures so obtained with the amounts of oxygen absorbed by the same oil, under the same conditions, over like periods of time.

Distillation

(a) Distillation of Crudes: Work is being done on the development of an accurate method for determining the maximum yield of gasoline obtainable from a crude. It is based on the use of a powerful fractionating still and aims at the determination of the true boiling point of the hydrocarbons present.

(b) Engler Curves of Blended Gasolines: Considerable progress has been made on the development of a method by which the Engler curve of a blend can be calculated from the known amounts and Engler curves of the blended cuts.

(c) Fractionation of Lubricating Oil: The effect of fractionation on the flash-point-viscosity relationship of lubricating cuts was studied. The results showed that fractionation did not have an appreciable effect on this relationship.

(d) Vapor Pressure of Gasoline: A method was designed to measure at room temperature the vapor pressure of gasoline at various percentages vaporized. The variation of the vapor pressure curve so obtained with weathering of the gasoline was determined.

The General Motors Research Corp., Dayton, Ohio, Messrs. Midgely and Boyd in charge, is still working on the solution of problems incident to the commercialization of tetraethyl lead as an ingredient of motor fuels. They are also devoting some attention to the study of the subject of antiknock compounds in general, and are also studying the mechanism of internal combustion, trying to determine just what it is that causes one fuel to knock worse than another, and what is the nature of the action of anti-knock and knock inducing compounds.

KENTUCKY-TENNESSEE

(Continued from Page 50)

been measured. The machinery from this well is being moved to a new location on the Albert Bartram farm, just across the hill on Chadwick Creek and the gas from the first well will be piped across the hill to be used as fuel at the new location.

Lawrence-Johnson Counties

In the North Weir Field of Johnson and Lawrence Counties, Daivd Fox' No. 3 B. R. Hamilton made 3 bbls. from the Weir sand. It is near Red Bush, in district No. 33.

The Central Kentucky Gas Co. is reported to have drilled in a gas well on the Milt Williams farm estimated at 500,000 feet per day.

Floyd County

The Eastern Carbon Black Co.'s No. 1 C. E. Allen, in district No. 21, is a duster in the Floyd County pay.

Wayne County

At Susie, district No. 13, Johnson and others made a 12-bbl. strike in their No. 8 on the Vickery tract at 876 feet, second Sunnybrook. In the same district, Spradlin & Marsh's No. 2 Harmon and No. 3 Bridgman were drilling.

At Big Sinking, Bowden and others were drilling No. 2 S. Bryant; the Beaver Oil Co. was fishing for tools in the No. 3 Morrow heirs.

At Oil Valley, Wright & Bell's No. 1 Elam is a rig; Pyle & Abbott's No. 1 John Cooper was drilling at 230 feet.

At Meadow Creek, the Illiken Oil Co.'s No. 2 Sam Heninger was drilling at 120 feet.

MONTANA OIL LANDS

The Royal Canadian Syndicate, of which P. Chester Thompson is president, has acquired control of the Royal Canadian of Montana, which owns approximately 13,000 acres in the Campbell-Kevin oil field, where a development campaign will be waged. The syndicate, although controlled by American capital, held no acreage in the United States until the acquisition of the Montana property.

LOUISIANA OIL REFINING CO.

RICHMOND, Va., Dec. 6.—At a special meeting of stockholders of Louisiana Oil Refining Corp. (subsidiary of Invincible Oil Corp.) an issue of $3,500,000 notes was approved, as was an amendment to the charter changing stock from $50 par value to no par value and increasing number of shares into ratio of 8.08 to 1 as recommended by board of directors.

Use It With Air or Hand Pump or Both

1 Columbian Underground Storage Tank of high grade steel, expertly welded and having a substantial factor of safety over and above that required by the Underwriter's specifications.

2 Auxiliary pressure tank with a factor of safety beyond that of the ordinary filling station air tank. Also expertly welded and tied to bottom of storage tank.

3 Dished heads—standard construction on Columbian underground storage tanks—a factor which gives them strength not common to underground tanks of even heavier steel. Auxiliary pressure tank also has dished heads.

4 Two and one-half inch fill pipe, 36 inches long.

5 Four-inch pipe, 36 inches long, through which inlet valve to pressure tank may be removed for cleaning.

6 Feed line which conducts gasoline from pressure tank to tower container. Ends 1 inch above bottom of tank to prevent picking up bottom settlings.

7 Feed line to which hand operated rotary pump may be attached. Takes gasoline direct from storage tank. Does not interfere with air operation.

8 Air line through which air pressure is applied to auxiliary tank. (See also 10).

9 Clean out line. Extends to within one-half inch of bottom of pressure tank. By opening it, closing 6 and applying air through 8, bottom settlings are forced out into the open air.

10 Spud for attaching drain-back line permitting draining of tower container back into storage tank. This line and air line may be connected with a three-way by-pass valve, the operation of which drains the tower container back through line 6, into the pressure tank, up through line 8, through the by-pass valve and into the storage tank through line 10.

11 Spud for attaching vent pipe extending up into the air. 11a Double goose-neck type vent which may be attached to 11.

12 Extra 4-inch spud with plug. Foot valve may be inserted through this in the event foot valve type of pump is used.

13 Welded-on elbow fill pipe through which pressure tank is filled with gasoline and into which is fitted one-way valve.

14 One-way inlet valve which opens automatically when pressure on auxiliary tank is released. Through it the auxiliary tank fills with gasoline by gravity.

15 Rod attached to housing of inlet valve and extending up through 4-inch pipe. With this rod the valve housing may be unscrewed from auxiliary fill pipe and lifted out through the 4-inch pipe in the event it should ever need attention.

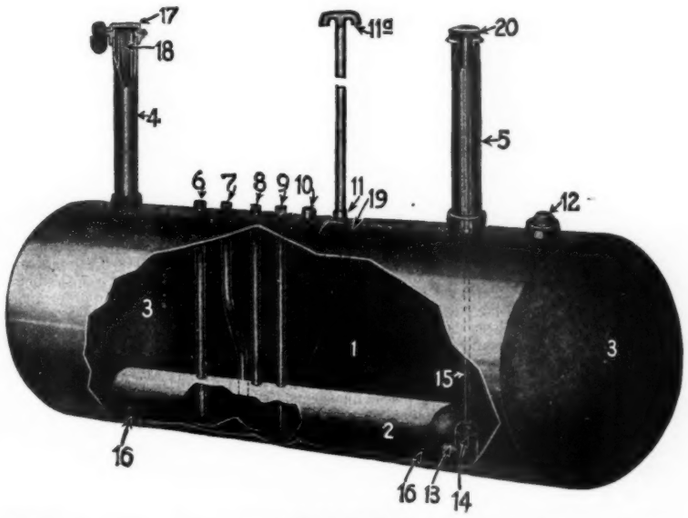
16 Steel straps which are welded to the auxiliary tank and to the bottom of the storage tank. Holds them together as a single unit.

17 Hinged cap atop the fill pipe. Has padlock arrangement.

18 Fine mesh strainer and fire screen fitting within the fill pipe.

19 Underwriter's label signifying that the Columbian Combination Underground Tank has been tested and approved by the Underwriter's laboratories.

20 Screw-on cap for 4-inch pipe provided for removing inlet valve to auxiliary pressure tank.



You too Will Like It

HUNDREDS of oil distributors swarmed the Columbian exhibit at the Tulsa show to inspect the "Cow and Calf" Tank. Many of them came back the second and third time to study it. Not a one left without expressing his appreciation of this new Columbian invention. Without doubt it was the most popular equipment attraction for oil distributors at this great International show.

One Chief of Distribution for a large oil company sent more than a score of his men to look it over and report to him. Their unanimous report was "Chief, buy us 'Cow and Calf' tanks for our underground storage and nothing else."

Already, manufacturers of air operated pumps are adopting the "Cow and Calf" tank as a standard unit of their systems.

What is the "Cow and Calf" tank and what does it do?

Briefly, it is a high grade, all-welded, dished head Columbian underground storage tank into which is built the auxiliary air tank necessary for the operation of air systems. It eliminates a separate air tank. It combines the storage and air tanks in one unit.

It is a combination tank in more ways than one. Besides air operated pumps it will handle hand operated pumps of the rotary or foot valve type. It will handle any one, any two or all three types simultaneously without interference, one with the other. How does it do it? Read the full details in the column to the left.

The Columbian Combination Underground (Cow and Calf) Tank has been approved by the Underwriter's laboratories and bears their label. Write for detail blue prints and specifications covering your underground requirements.

Truck Tanks
Oil Field Tanks
Bulk Station Tanks

Underground Tanks
Floating Tank Decks
Barrels, Buckets

Carrying Cans, Funnels
Faucets, Valves

Oil and Gasoline Pumps
Plates, Sheets, Angles

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

TANKS FOR THE WORLD

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NEW YORK 90 Church Street
TULSA, OKLA. Owasso and Frisco Tracks
DALLAS, TEXAS 210 Southwestern Life Bldg.
LOS ANGELES, CALIF. 806 Wright & Callender Bldg.
SAN FRANCISCO, CALIF 564 Market Street

EQUIPMENT AND SUPPLIES

NATIONAL'S IDEAL BLUE TO DISTINGUISH CARS

A new type of automobile for use in the Mid-Continent territory has been adopted by the National Supply Co. The new job is a special built Willys-Knight coupe, the body employing several features of a special character.

The painting is a color scheme combining the Ideal blue of the National on the body, while the fenders, wheels and chassis are in black. The cars are shipped direct from the factory at Toledo and the paint job is completed at the factoy, even to the signs appearing on the cars.

Within a short time the roads of the Mid-Continent Field will be dotted with these blue cars, thus carrying the color scheme of the National to the producing territories and linking up the National organization with the factor of service evidenced by the presence of their cars throughout the fields.

BELT MAKES GOOD RECORD

A record for one length of "Sensation" drilling belt is described in a recent issue of the "Bridgeport Driller," organ of the Bridgeport Machine Co., of Wichita, Kans., manufacturers of the belting. This particular piece of belting, according to the article, is still in use by Rosier & Pendleton in Texas. It has already drilled six wells, having a total footage of over 20,000 feet; straight reamed 1,200 feet of 8¼-inch hole; underreamed more than 200 feet and fished 45 days. It has a total of more than 400 days of actual drilling time to its credit and from all appearances will probably drill two or three more wells. It has not given any clamp troubles, although the ordinary drilling belt clamps that are employed on most drilling belts were used, and there seems to be no indication of ply separation. Very little has been cut from the belt on account of stretching. The belt is uniform from end to end, the article adds.

NEW COLUMBIAN CALENDAR

In accordance with the usual practice of issuing a beautiful marine calendar each year, the Columbian Rope Co. is now sending out its calendar for 1925.

This calendar features a fine square-rigged ship of the clipper design. The original painting from which the reproduction was made is by Charles R. Patterson, one of the foremost marine painters of the present day. The calendar measures 16½ inches wide by 33 inches long and has a large date pad showing three months at a glance.

All persons who are on the mailing list of "The Columbian Crew," a publication issued monthly by the Columbian Rope Co., will receive a copy of this calendar before January 1, 1925, but all persons who buy, sell or use cordage may procure a copy of this calendar by writing direct to the advertising department of the Columbian Rope Co. at Auburn, New York.

OPENS LOS ANGELES BRANCH

A branch office and warehouse has been established in Los Angeles by the Sullivan Machinery Co., according to a recent announcement by the company. It will be located at 412 East Third Street and will be under the supervision of Benjamin P. Lane as local manager. It will contain a complete stock of Sullivan air compressors, hammer drills, concrete breakers and air lift equipment, as well as spare parts for all of the foregoing articles. Prompt service to the company's customers in the Los Angeles district is to be assured by means of this new branch.

HEAVIER CONSUMPTION OF STEEL PRODUCTS NEXT YEAR INDICATED

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 8.—The volume of steel business done in the past week shows no particular change from that of the previous week, as to the total, but there have been increases in some lines and decreases in others. The chief point about the market situation lately has been that some lines were in the act of advancing, and as advances have been completed the buying naturally drops. Thus in wire products, which were advanced November 20 and within a few days afterward by the independents, there was heavy business done before the advance, in 60-day contracts, and the buyers are now covered. The American Sheet & Tin Plate Co. (Steel Corp.) advanced its prices on sheets the first quarter November 25, and did a rushing business just before and after the announcement, in prompt deliveries, i.e., the sales were made "for delivery at mill convenience" and some of the deliveries will run into the new year.

These are samples of what has been going on in the steel market, explaining why the sales have been running so large, probably in excess of productive capacity, when ordinarily the turnover would be tapering off at this time of year. Of course, no increase in current consumption is indicated by this turnover. Consumption is expected to increase next year. This year's consumption has not been poor by any means and next year would be a very good year if it showed merely a moderate improvement. The predictions of heavier consumption are based upon general sentiment and the settled condition in the commodity and money markets, and not, it must be confessed, upon actual tonnage appraisals of steel requirements. The steel market is totally different from that before the war, in that both on account of the change in style of doing business and the largeness of capacity there is not the forward buying there used to be, and appraisals of production and consumption cannot be made on the basis of orders and contracts on mill books. This year's steel ingot production will run a trifle over 36,000,000 tons, or a little over the average of the preceding five years, since the war.

Pipe mill products are not under the influence of advancing, or recovering prices as has been the case in wire products, sheets, bars, etc., for they had not declined from the level reached in April, 1923, except as delivered prices in certain areas declined on account of the setting up of some new basing points in addition to Pittsburgh. Hence they are not showing an advancing tendency now, and the buying is simply against requirements, not to avoid advances. Jobbers have continued to buy merchant pipe quite freely, evidently having a large distribution, as they would not be disposed to increase stocks just before time for the annual inventory. Contrary to the dictates of the season of year, buying of oil well material has been increasing somewhat in the past month, particularly in Oklahoma and Texas territory, on account of increased drilling activity.

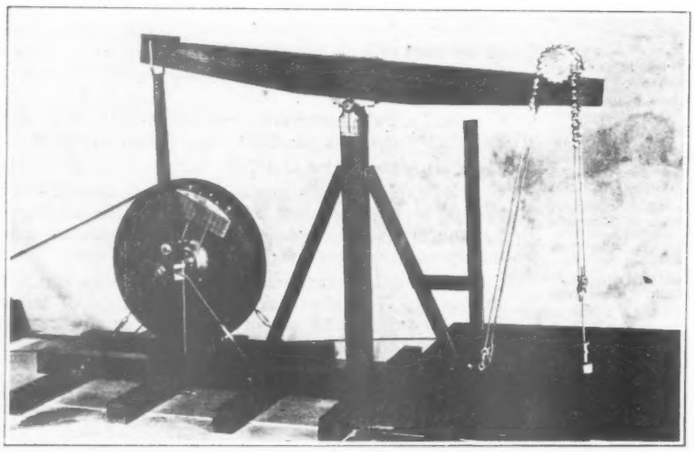
The pipe mills are quite convinced that the entire oil situation has rounded a turn and that there will be heavy drilling next year. They assume that there will be also considerable demand for line pipe, but as to this there is nothing very definite.

The steel industry as a whole is now running at slightly over 70 per cent, comparing with a rate of 66 per cent in October, and making the present rate the best since last April, while it is a trifle above the average of the past 11 months. The pipe mills are probably averaging close to 70 per cent, while a couple of months ago they were down to 60 per cent or perhaps a trifle less.

The Standard Oil Co. order for 300,000 boxes of tin plate for first half, to make containers for export oil, having been placed over a fortnight ago, there is no particular activity in that direction just now. An export order for about 50,000 boxes for South America, to make oil containers, was booked last week.

The Kansas City Structural Steel Co. has booked 2,000 tons of tankage from Cosden & Co., the plates to be rolled in the Chicago district.

COUNTER BALANCE REDUCES ENGINE LOAD



A band wheel counterbalance which reduces the load on the engine and belt about one-third, according to the inventor, by using the momentum created during the downward stroke, has been perfected by M. P. Burke of Tulsa, Okla., and is being manufactured by the Oil Country Specialties Co. of Coffeyville, Kans. Patents are pending.

This counter balance is hung between the front jack post and the band wheel, and a bearing is placed on the band wheel shaft from which two 1½-inch rods are suspended. A weight of about 300 pounds is held by the two suspended rods and additional sectional weights of 100 pounds each can be added until the desired weight is obtained.

The main feature of this counter balance is that when pumping the counter balance is fastened to the outer ring of the band wheel with three 1-inch bolts, and the bearing turns with the band wheel shaft. While pulling rods the tubing and counter weight is disconnected from the band wheel and pulled over and fastened to the jack post and the band wheel shaft turns in the bearing. The two suspension rods take the centrifugal force and the load of the weights at all parts of the revolution, eliminating the danger of pulling the band wheel out of alignment.

This band wheel counter balance is a complete change in counter balance from reciprocating to centrifugal motion. With the walking beam counter balance most generally used, the momentum created by the falling of the weight must be overcome before the weight can be started upward, while with the band wheel counter balance the momentum created by the downward stroke is used on the upward stroke.

With the band wheel counter balance all the weight of the rods and half of the fluid can be counter balanced and with the momentum created during the easy part of the revolution, the load on the engine and belt can be reduced to about one-third, the inventor claims.

Another feature is that due to the center of gravity of the weight being near the outer edge of the band wheel and with a shorter crank distance a weight of 1,000 pounds on the band wheel is equal to 2,000 or 3,000 pounds on the walking beam.

TRACTOR CATALOG

The Holt Manufacturing Co., Inc. of Peoria, Ill., and Stockton, Cal., makers of "Caterpillar" tractors for oil fields and industrial uses, has published an attractive booklet entitled "Keeping Winter Roads Open." Numerous illustrations of "Caterpillar" snow plows in action under all kinds of conditions supplement the descriptive matter. "Caterpillar" tractors are made in 10-ton, 5-ton and 2-ton sizes and each size has three speeds forward and one reverse. The various advantages of each size in special cases are treated in the booklet which is printed in two colors.

ARCH INSTALLATION

The development of the Detrick arch for industrial furnaces is told in an elaborate and attractive booklet now being distributed to the trade by the M. H. Detrick Co. of Chicago. The adaptability of Detrick arches to all types of boilers and stokers, industrial furnaces and oil stills is explained in detail with the aid of many drawings and illustrations. A double-page illustration shows a Detrick Arch installation with an oil still, displaying the adaptability of the arch to special designs.

DESCRIBES PIPE TOOLS

Catalog No. 5 has just been issued by the American Pipe Tool Co. of Chicago, makers of pipe vises, vise stands, cutter wheels, die stocks and wrenches. It contains price lists and complete descriptions as well as illustrations of all of the articles mentioned.

CONTRACTS FOR DERRICKS

The Midwest Refining Co. has let a contract for 50 steel drilling derricks for Salt Creek Field to Lee C. Moore Co., Inc., and a similar contract to the American Steel Derrick Co. These orders are believed to presage increased drilling [illegible] Creek.

Athey Wagons Provide Never-Ending Paved Roads

They Bridge the Soft Spots

The broad track bands on Athey Wagons provide never ending paved roads for the wheels that carry the load.

Athey Wagons travel over sand and mud like round wheels over pavement. The broad steel bands give 15 times as much road contact as do ordinary wheels. The load is distributed over 4¼ square feet—not concentrated. Athey Wagons therefore ride ON TOP of the mud—NOT IN IT.

Due to the construction of the band, Athey Wagons are easily drawn. You can carry 30% more tonnage with 50% less tractive power. Capacity 10-ton loads carried wherever animals or tractors can work.

You can save time and money by using Athey Wagons. Let us send you further information.

Athey Trusswheel Company

130 N. Wells St., Chicago, U. S. A.

Cable Address: "Trusswheel Chicago"

Representatives:

The Baldwin Locomotive Works, Export Agents, Philadelphia, Pa.

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ATHEY TRUSSWHEEL WAGON

IT BRIDGES THE SOFT SPOTS

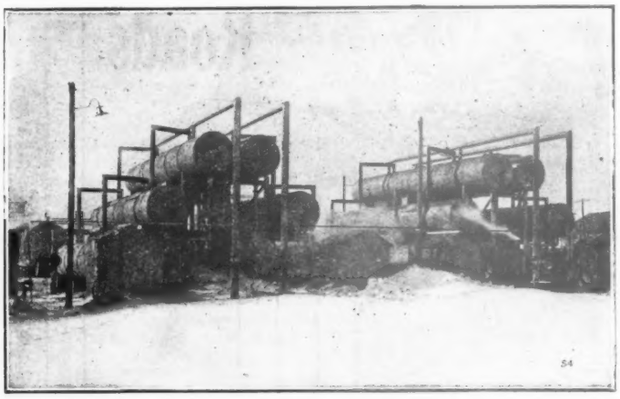
to be assured by means of this new branch.

shaft turns in the bearing. The two suspension rods take the centrifugal force

2,000 or 3,000 pounds on the walking beam.

believed to presage increased ... Creek.

ENGINEERS & CONTRACTORS IN NATURAL GAS AND OIL



Organization and Equipment Always Ready

An operation or development, in the oil or gas industries, entrusted to the Hope Company proceeds at once. There are no delays due to a preliminary assembling of forces.

The Hope organization is always intact and complete, ready for duty. Hope equipment is always ready and ample—and usually strategically located for prompt action.

Capital invested in a Hope-conducted construction operation reaches an active earning stage more quickly than when handled by a less competent and less prepared organization.

HOPE SERVICE

Engineering counsel, design, construction and contracting—in pipe lines for oil and gas, oil pumping stations, gas compressing and boosting plants, gasoline recovery systems, city and inter-city gas mains.

UNIT RESPONSIBILITY

HES-17

ENGINEERS CONTRACTORS HOPE Engineering & Supply COMPANY DESIGNERS MANUFACTURERS

MT. VERNON, OHIO, U. S. A.

REFINERY CRUDE RUNS AGAIN INCREASE

(Continued from Page 36)

vances in crude prices have developed, any one acquainted with markets in the Mid-Continent area will agree that ever since the first of November new crude supplies have been difficult to obtain with premiums being paid above the posted prices in many instances. The fear of a duplication of the past two years when crude prices proved premature, probably accounts for the failure of the larger buyers to boost their prices. It has been as difficult for them to hold their crude connections as it was last year and the year before when they advanced their posted schedules.

Just recently another factor has entered in the form of the new Wortham Field of Texas which is also deterring the larger companies in advancing their prices. If this field should bring a large flush production the percentage relationship between refinery runs and crude production will be less January 1 of next year unless refiners during December again greatly increase their plant operations and the crude advances which appeared certain up until the Wortham Pool was discovered, will be postponed for a few weeks at least. In the opinion of some market observers the probable production of Wortham is too uncertain at this time and is entering too late to prevent an advance in posted crude schedules during December.

Oklahoma

Outside of the operations of Cosden & Co. there were no important changes in the operations of Oklahoma plants. The Champlin Refining Co., Marland Refining Co. and Tidal Refining Co. reduced their runs, the Tidal lowering its runs at its Drumright plant from 4,000 to 2,000 bbls. daily. The Sinclair Refining Co. also reduced its runs at Cushing. The Producers & Refiners Corp. increased its runs at its Blackwell and West Tulsa plants. The Bell Oil & Gas Co. of Tulsa, a marketing concern, has purchased the Union Oil & Refining Co.'s plant at Grandfield, formerly known as the Twin Six Oil & Refining Co. The new owners are understood to be negotiating for a crude supply with the view of starting the plant some time during the month.

Kansas

In Kansas, the Sinclair Refining Co. has increased its crude to stills at its Argentine and Coffeyville plants from 8,600 to 13,100 bbls. Outside of the operations of the Standard of Kansas previously mentioned, there were no other important changes.

North-Central Texas

In north Texas, the Tidal Refining Co. has resumed operations at its Burkburnett plant after a shut down of 30 days for repair.

North Louisiana-Arkansas

In North Louisiana, the Louisiana Oil Corp. and the Shreveport Producing & Refining Co. increased their crude runs a few hundred barrels. In Arkansas the Lion Oil & Refining Co. has increased its runs 600 bbls. It is understood that the Pine Bluff Refining Co. will have its plant at Pine Bluff shut down part of the month:

REFINING OPERATIONS IN OKLAHOMA
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Allied Refining Co., Okmulgee	1,800	1,000	1,000
Anderson-Prichard, Cyril	1,200	900	850
Barnsdall Refining Co., Barnsdall	5,000	4,600	4,500
Bell Oil & Gas Co., Grandfield	2,000	Shut down	Shut down
Bolene Refining Co., Enid	5,000	3,900	3,800
Cameron Refining Co., Ardmore	4,000	3,100	3,300
Canfield Refining Co., Yale	500	75	50
Champlin Refining Co., Enid	16,000	11,000	12,500
Chestnut & Smith Corp., Sand Springs	5,000	Shut down	Shut down
Coleman-Nelson Corp., West Tulsa	2,000	100	Shut down
Cosden & Co., West Tulsa	35,000	32,000	23,000
Cushing Refining & Gasoline Co., Cushing	2,500	1,800	1,800
Cushing Refining & Gasoline Co., Blackwell	1,500	1,000	1,000
Daisy Belle Petroleum Co., Wilson	2,000	125	200
Empire Refineries Inc., Cushing	7,000	5,250	5,500
Empire Refineries, Inc., Okmulgee	2,500	2,500	2,500
Empire Refineries, Inc., Ponca City	6,500	6,000	6,000
Garber Refining Co., (Omar)	3,000	1,300	1,300
Globe Oil & Refining Co., Blackwell	5,000	4,000	4,000
Hewitt Refining Co., Hewitt	1,800	800	750
Illinois Oil Co., Cushing	2,500	1,800	2,200
Imperial Refining Co., Ardmore	6,000	4,100	4,300
Johnson Oil Refining Co., Cleveland	4,000	3,200	3,000
Lawton Refining Co., Lawton	1,000	125	150
Lorraine Refining Co., Bristow	4,000	2,500	3,000
Marland Refining Co., Ponca City	15,000	12,700	14,000
Nyanza Refining Co., Wilson	2,500	750	800
Oil State Refining Co., Enid	2,000	500	800
Oil State Refining Co., Allen	600	Shut down	350
Okla.-Tex. Refining Co. (Sagamore), Grandfield	2,000	2,200	2,000
Phillips Co. (Waite), Okmulgee	6,000	5,200	5,000
Peppers Gasoline Co., Covington	1,000	500	500
Pierce Oil Corp., Sand Springs	10,000	5,000	5,000
Producers & Refiners Corp., West Tulsa	7,000	5,200	4,500
Producers & Refiners Corp., Blackwell	8,000	1,800	1,000
Pure Oil Co., Ardmore	6,500	2,000	2,500
Pure Oil Co., Cushing	6,000	4,000	4,500
Pure Oil Co., Muskogee (O. P. & R. Co.)	2,500	2,000	2,000
Riley Petroleum Co., Bristow	800	500	400
Rock Island Refining & Pipe Line Co., Duncan	2,000	1,700	1,500
Roland Oil Co., Bristow	1,500	1,000	1,000
Sapulpa Refining Co., Sapulpa	7,000	Shut down	Shut down
Shaffer Oil & Refining Co., Cushing	8,000	6,500	6,300
Superior Oil Corp., Grandfield	3,000	Shut down	Shut down
Sun Co., Yale	3,000	2,000	2,000
Sinclair Refining Co., Cushing	6,000	2,000	3,500
Sinclair Refining Co., Muskogee	1,000	700	700
The Texas Co., West Tulsa	10,000	9,500	9,250
Texas Pacific Coal & Oil Co., Wynnewood	2,500	1,250	900
Tidal Refining Co., Drumright	5,000	2,000	4,000
Transcontinental Oil Co., Boynton	2,500	1,500	1,500
Transcontinental Oil Co., Bristow	5,000	4,500	4,500
Tonkawa Petroleum Co., Tonkawa	2,500	1,000	900
Turley Refining Co. (formerly Home Petroleum Co.), Oklahoma City	2,500	Shut down	Shut down
Whaleback Production Co., Oklahoma City	1,500	125	200
Western Oil Corp., Beckett	1,500	1,000	1,000
Yale Oil Corp., Yale	1,500	1,200	1,500
Yale Asphalt Co., Yale	1,000	2,000	350
Total	258,200	173,000	167,350

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Amarillo Refining Co., Amarillo	2,000	1,400	1,000
American Refining Co. Wichita Falls	7,000	5,000	4,800
Boner, H. E., Burkburnett	500	Shut down	Shut down
Boardman Oil Co., Wichita Falls	750	250	325
Buffalo Refining Co., Sherman	500	250	250
Clayton Oil & Refining Co., Dallas	4,500	4,500	4,000
Cross (H. H.) Refining Co., Corsicana	2,500	800	800
Crystal Petroleum Co., Burkburnett	1,000	600	600
De Leon Refining & Pipe Line Co., De Leon	1,500	185	150
Griswold Oil Co., Wichita Falls	3,000	2,450	2,300
Gulf Refining Co., Fort Worth	15,000	6,000	6,100
Humble Oil & Refining Co., Burkburnett	2,000	2,000	2,000
Humble Oil & Refining Co., Hearne	10,000	7,500	7,500
Interstate Gasoline Products Co., Iowa Park	2,000	Shut down	Shut down
Iowa Park Prod. & Refining Co., Iowa Park	2,500	1,700	1,200
Lone Star Refining Co., Wichita Falls	4,000	Shut down	Shut down
Miller Petroleum Co., Wichita Falls	3,000	2,000	1,600
Magnolia Petroleum Co., Fort Worth	12,000	6,000	6,000
Magnolia Petroleum Co., Corsicana	10,000	2,100	2,300
Megargel Refining Co., Megargel	2,000	1,300	800
Mexia Oil & Refining Co., Mexia	600	100	100

Waste!

For miles this stream was covered with B.S. and cut oil. This was a general condition of the streams passing through oil fields until the Tret-O-Lite process was introduced.

If You Discard "B. S."

—*you are throwing away dollars*

The tremendous waste of "cut oil" of the early days was first halted by the introduction of Tret-O-Lite.

Vast quantities of "cut oil" no longer flow down the streams; but a great waste continues, nevertheless, through the discarding of "B. S." containing petroleum. Some producers will not trouble to treat 1 to 5% of B. S., but simply discard it. Others, in treating "cut oil," use unscientific methods which leave a "B. S." residue that is then discarded.

Such "B. S." can be economically collected and treated with Tret-O-Lite and its petroleum completely recovered. Ask us for particulars.

YOU CAN PREVENT "B. S."

TRET-O-LITE has long been used to cure "B. S.". It is now also being used to prevent its accumulation. When mixed with the oil as it flows from the well, it brings about a clean break in the storage tank, where formerly a "B. S." residue was formed. Above is shown a "Tret-O-Lizer" for insertion on flow lines.

WM. S. BARNICKEL & COMPANY
St. Louis, Mo.
Offices and Plant: Webster Groves, St. Louis Co., Mo.

Tret-O-lite

Reg. U. S. Pat. Off.

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Continuous Oil Field Operation

In the Homer, Louisiana, Field six All Reid Pumping Plants, similar to the one illustrated above, have established an enviable record for continuous operation.

From August 31, 1923, to February 16, 1924, each of these six plants was in operation an average of 4051 hours with an average shutdown time, due to all causes, of only five hours. Less than half of a tour in six months!

Each plant consisted of a Reid Gas Engine and a Reid Band Wheel Pumping Power, 25 and 30 H. P. engines and 16 and 18-foot powers being used. Each plant pumped up to twenty wells, the average being thirteen wells, depths running from 1000 to 1400 feet. About 11,000 feet of rod line was handled by each plant.

If you are interested in hearing further about this or similar installations, write us and we will gladly furnish you additional information.

Joseph Reid Gas Engine Company,
Oil City, Pennsylvania, U. S. A.

Branches and Agencies—Marietta, Ohio; Logan, Ohio; Newark, Ohio; Ft. Recovery, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal.; Oklahoma, Kansas, Texas, Arkansas and Wyoming, Frick-Reid Supply Company, Tulsa, Okla., and Branches.

Branch Shop—TULSA, OKLA.

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National Refining Co., of Texas, Greenville	2,000	300	450
Noble Oil & Gas Co., Burkburnett	5,000	2,000	2,800
Olney Oil & Refining Co., Olney	1,000	250	200
Oriental Refining Co., Dallas	6,000	200	200
Oriental Refining Co. (Trinity), Dallas	5,000	2,500	300
Orient Petroleum Co., Wichita Falls	2,000	1,500	3,500
Paris Refining Co., Paris	500	200	1,200
Panhandle Refining Co., Wichita Falls	4,500	4,100	300
Prairie Refining Co., Grand Prairie	500	Shut down	3,500
The Petroleum Corp., Electra	2,000	1,400	Shut down
Primrose Refining Co., Wichita Falls	1,500	1,200	1,000
Producers Refining Co., Gainesville	5,000	4,000	800
Star Refining Co., Fort Worth	1,500	1,000	4,300
State Refining Co., Dallas	1,000	Shut down	700
Sunshine State Oil & Refining Co., Wichita Falls	2,500	700	Shut down
Tidal Western Refining Co., Burkburnett	3,000	2,000	1,000
The Texas Co., Dallas	16,000	8,500	Shut down
Texhoma Oil & Refining Co., Wichita Falls	7,000	5,000	8,400
Tiger Refining Co., Breckenridge	1,500	100	4,500
Transcontinental Oil Co., Fort Worth	5,000	2,800	100
Travis Refining Co., Burkburnett	1,000	200	3,500
Waggoner Refining Co., Electra	3,400	3,000	200
White Eagle Oil & Refining Co., Fort Worth	5,000	2,500	2,500
Wichita Refining Co., Wichita Falls	2,000	700	3,000
			1,000
Total	164,250	88,285	84,675

REFINING OPERATIONS IN KANSAS
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Commonwealth Oil & Refining Co., Moran	1,800	200	250
Derby Oil & Refining Co., Wichita	6,000	3,675	3,800
El Dorado Refining Co., El Dorado	3,500	2,300	2,500
Frontier Refining Co., Hutchinson	2,500	200	300
Grant Oil Co., Augusta	500	Rerun	Rerun
Golden Rule Refining Co., Wichita	1,000	500	400
Industrial Refining Co., El Dorado	1,500	Shut down	Shut down
Kanotex Refining Co., Arkansas City	6,000	5,400	5,000
Kansas Oil Refining Co., Coffeyville	2,000	300	400
Kansas City Refining Co., Kansas City	4,000	3,600	3,800
Moore Refining Co., Arkansas City	6,000	4,300	4,800
Miller Petroleum Co., Humboldt	2,000	1,000	1,100
National Refining Co., Coffeyville	6,000	6,000	5,500
Peerless Oil Refining Co., Chanute	3,500	1,500	1,700
Red Bird Refining Co., Fredonia	200	50	100
Richardson Refining Co., El Dorado	1,500	Shut down	Shut down
Roxana Petroleum Corp., Arkansas City	15,000	10,000	10,500
Sinclair Refining Co., Coffeyville	6,500	6,300	4,400
Sinclair Refining Co., Argentine	8,000	6,800	4,200
Skelly Oil Co., El Dorado	14,000	7,500	8,000
Standard Oil Co. of Kansas, Neodesha	12,000	11,000	6,750
Vickers Petroleum Co., Potwin	3,000	2,200	2,400
Waite Phillips Co., Wichita	5,000	Shut down	Shut down
White Eagle Oil & Refining Co., Augusta	6,500	5,000	5,200
Southern Missouri Group—			
Interstate Refineries, Inc., Centropolis	1,500	Shut down	Shut down
Marshall & Co., Sheffield	2,500	Shut down	Shut down
Wilhoit Refining Co., Joplin	1,500	1,100	900
Total	135,300	78,925	71,400

REFINING OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Cross Refining Co., Smackover	2,000	2,000	2,000
Farmers Oil & Refining Co., Texarkana	750	Shut down	Shut down
Four States Refining Co., Texarkana	750	Shut down	Shut down
Grison Refining Co., El Dorado	750	Shut down	Shut down
Home Refining Co., Camden	750	100	100
Home Oil & Refining Co., Hot Springs	500	100	100
Houston Oil Co., Hamden	5,000	Building	Building
Jones & Co., R. C., El Dorado	1,000	Shut down	Shut down
Kettle Creek Refining Co., Pearson	4,000	3,000	3,000
Lion Oil & Refining Co., El Dorado	10,000	5,400	4,800
Ouachita Valley Refining Co., El Dorado	1,500	Shut down	Shut down
Pine Bluff Refining Co., Pine Bluff	2,000	500	800
Root Refineries, El Dorado	3,000	2,100	2,000
Union Pipe Line & Refining Co., El Dorado	4,000	700	700
Shippers Petroleum Co., El Dorado	700	Shut down	Shut down
Total	36,700	13,900	13,350

REFINING OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Caddo Central Oil & Refining Co., Shreveport	3,500	3,500	3,500
Caddo Central Oil & Refining Co., Shreveport	7,000	5,000	5,000
Great Southern Refining Co., Ardis	2,000	600	600
Louisiana Oil Refining Corp.—			
Shreveport	10,000	10,000	9,600
Bossier	3000		
Red River Refining Co., Crichton	1,800	Shut down	Shut down
Shreveport Producing & Refining Co., Shreveport	5,000	4,000	3,800
*The Texas Co., Ardis	7,000	6,000	6,000
Total	37,300	29,100	28,400

*Topping.

OKLAHOMA FIELDS

(Continued from Page 42)

The Texas Co.'s No. 10, CNL NE, Section 29-25-8, Pawhuska district, got 4,000,000 feet of gas at 2,383-2,385 feet, and mudded off the sand and was drilling at 2,495 feet. No. 11, NE cor. SW NE NE, Section 29-25-8, got sand at 2,371-2,385 feet with 4,000,000 feet of gas, and 6,000,000 feet of gas at 2,391 feet; both sands were mudded off, and the well is being cleaned at 2,395 feet; C. M. Hawks and others abandoned as dry at 1,587 feet No. 1-A Webber, C SW SE, Section 36-21-13.

The Phillips Petroleum Co.'s No. 4 NE cor. SE NE SE, Section 10-21-9, got the top of the Bartlesville sand at 2,268 feet, pay at 2,295-2,300 feet, and drilled to 2,302 feet. The well was shot with 20 quarts and was producing 75 bbls. Titus, Norris & Bird's No. 3, NE cor. Section 23-21-10, got the pay sand between 2,540 and 2,546 feet, and was drilled to 2,548 feet. The well was given a 20-quart shot, and was producing 20 bbls.

T. O. Lilystrand and others' No. 2, C E half SE SE, Section 14-21-10, is spudding in.

Stover Brothers and Simons' No. 2, SW cor. Section 30-24-9, hit the top of the Bartlesville sand at 2,128 feet, and got the first oil at 2,131 feet. The well was drilled to 2,148 feet, and was swabbing 75 bbls. after a 60-quart shot.

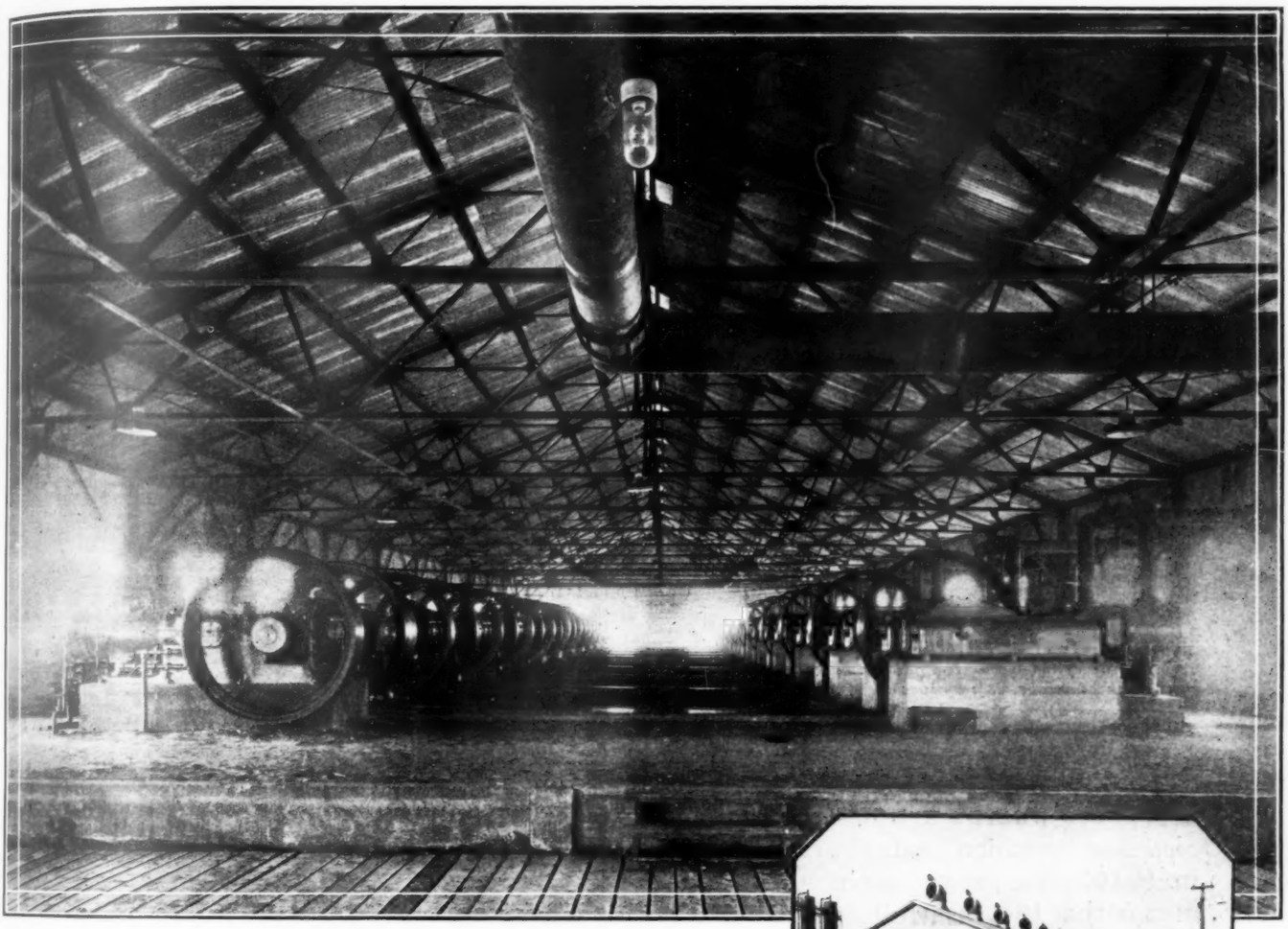
The Price Oil Co. is moving in the tools to start No. 4, SE cor. Section 25-24-8; Alexander & Shakeley are moving in tools for No. 2, NW cor. Section 31-24-9. Gilliland and others' No. 5, SW cor. NE SW, Section 31-24-9, is drilling at 200 feet. D. F. Millard has a machine rigged up for No. 1, NW cor. NW SW, Section 12-22-11.

The Owen-Osage Oil Co. has abandoned No. 1, SW cor. NE SE, Section 5-23-11, at 1,870 feet.

The Midland Oil Co.'s No. 1, C SW SE SE, Section 12-25-5, 12 miles south of the Burbank Pool, got a small amount of gas in a sand topped at 2,804 feet. At 2,859 feet the drill went into shale.

In Okmulgee County the Mountain States Oil Co. got a show of 20 bbls. in its No. 2 Roberts, SE cor. NW SW, Section 28-13-11, from sand at 1,920-1,930 feet, and was drilling at 2,000 feet. The Amerada Petroleum Corp.'s No. 1 Larner, C NE NE SE, Section 32-13-12, has shut in a 12,000,000-foot flow of gas from a sand at 2,290-2,309 feet. The U. S. Zinc Co.'s No. 1 Bruner, C E half SE SE, Section 10-11-13, got 9,000,000 feet of gas at 2,296-2,301 feet, which has been shut in.

Clover Brothers' No. 3 Grant, CNL



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The selection of a BRADEN Steel Building to house the huge battery of compressors is attributable to the widely recognized merit of BRADEN Buildings. Designed by skilled engineers, they are constructed of highest grade materials, and are strong, durable, and safe.

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500-1000 Lbs. Working Pressure

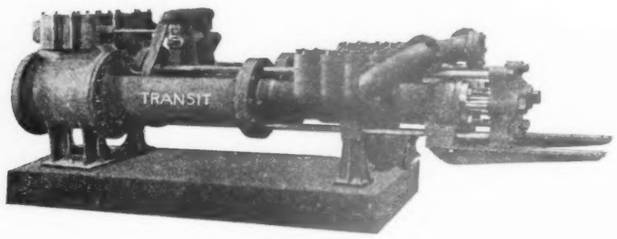

Fig. 540
Steam cylinder dia., 18". Plunger dia., 5".
Length of stroke, 18", 6" suction, 3" discharge.

These pumps are designed for *continuous* operation against pressures up to 1000 lbs. per square inch. This means that they are built strong and rigid with broad bearing and packing surfaces. The relatively long stroke cuts down the number of reversals, and saves wear and tear on all moving parts.

Where the cost of steam runs high, these pumps can be furnished with compound steam ends.

Send for Bulletin No. 12 for a complete list of sizes and capacities.

NATIONAL TRANSIT PUMP & MACHINE CO.

OIL CITY, PA.

District Offices: New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

SW NW, Section 3-15-11, was shot with 80 quarts between 1,950 and 2,013 feet, and did 50 bbls. the following 24 hours. Jackson & Wise's No. 5 Grayson, CNL NW SW SW, Section 3-15-11, got sand between 1,974 and 2,016 feet, which was shot with 120 quarts for a 20-bbl. initial production.

The Sheridan Oil Co.'s No. 1 Willis, NW cor. NW SW, Section 6-15-11, was dry and abandoned at 3,098 feet. George Wittman's No. 1 Tiger, SE cor. NE SE, Section 31-14-11, was dry at 3,205 feet. The Elm Oil Co.'s No. 14 Rentie, CEL NE SW, Section 13-14-14, was abandoned at 1,539 feet. Wanderich's No. 8 Fields, CWL NW SE, Section 13-14-14, was abandoned at 1,539 feet. Misner and others' No. 3 Love, SW cor. SW NE, Section 16-14-14, was a failure at 1,710 feet.

Misner and others' No. 5 Love, SW cor. SE SW NE, Section 16-14-14, got a 6-bbl. production from a sand at 807-817 feet after it had been given a 40-quart shot. W. R. Sommerville's No. 2 Love, CEL NE NW, Section 28-14-14 got sand at 1,135-1,175 feet, and a dry sand at 1,930-1,965 feet. The upper sand was shot with 60 quarts, which gave an initial production of 25 bbls.

Kelly & Noble's No. 2 Grayson, C N half NW SW, Section 3-15-11, was drilling at 300 feet. Te Pollyanna Oil Co. has a rig up for No. 1 Adams, NW cor. NE NE, Section 12-15-11. The Gates & Cook Drilling Co.'s No. 1 Carolina, NE cor. NE SW, Section 3-15-12, was drilling at 800 feet. Brisco and others' No. 1 Sneed, SE cor. SW NW, Section 26-15-12, has spudded in and shut down. E. B. Grubbs is spudding in No. 6 Owens, SE cor. NW SW, Section 22-15-14. Misner and others' No. 6 Love, SE cor. SE NE, Section 16-14-14, was drilling at 450 feet.

E. L. Lambert's No. 6 Freeman, SE cor. NE NE, Section 7-13-15, is drilling at 600 feet. Moneset Oil Co. is rigging up No. 1 Smith, C NE NW NW, Section 29-13-13. Kiener Oil & Gas Co. is drilling No. 5 Carolina, SE cor. Section 35-12-13, and has set the 6-inch casing at 1,835 feet. C. R. King is spudding in No. 1 Herrod, NW cor. Section 14-11-13. H. B. Webb is building the rig for No. 2 Asbury, W half SE SE, Section 32-11-12.

Ralph Vierson and the Flesher Petroleum Co. have a showing in the Wilcox sand at 2,827 feet in No. 1 Barnett, SE cor. Section 19-12-14, McIntosh County. A 4,000,000-foot flow of gas was encountered at 2,170 feet. The last reports stated that there were about 1,500 feet of oil in the hole and preparations were being made to swab.

Muskogee County

Harshey & Delaney's No. 1 Lee, SE cor. SE SW, Section 35-15-16, Muskogee County, a 5,000,000-foot gas well at 1,630-38 feet, was shut in. H. E. Williams also shut in a 5,000,000-foot flow of gas in his No. 1 Manuel, CWL NW NW, Section 17-15-17, from sand at 1,385-1,386 feet. A.Straughn's No. 3 Richards, CWL NW NW, Section 7-16-16, was abandoned at 1,480 feet. Hazlett and others' No. 3 Smith, SW cor. SW NE, Section 27-14-15, was dry at 1,919 feet. J. D. Edmondson's No. 1 Bumps, C NE SE SW, Section 8-14-16, was dry and abandoned at 1,815 feet.

In Pawnee County

Ora Green's No. 3 Canfield, NE cor. NE SE, Section 17-20-7, Pawnee County, got oil in sand at 2,663-2,695 feet. Two shots of 20 and 30 quarts started the well off at 250 bbls.

The Rex Oil Co.'s No. 7 Martin, NW cor. SW SE, was dry and abandoned at 3,235 feet. Admason and others' No. 2-A Meyers, S half NE SW, Section 32-21-8, was dry at 2,610 feet.

The Westerly Oil Co.'s No. 1-A Smith was drilling at 250 feet. The company has a rig on the ground for No. 6 Smith. Adamson and others' No. 1 Hayden, NE cor. SE SE, Section 31-21-8, was drilling at 1,780 feet. The Galvez Oil Corp. has a rig on the ground for No. 6 Van Eman, SE cor. SE NE, Section 17-20-7.

Magnolia Petroleum Corp.'s No. 6 D. Miller, SE cor. NW NW, Section 4-22-3, is drilling at 105 feet; No. 1 White Mule, C NW SE, Section 8-22-3, is a rig. Harley, Garber & Pulse have a rig up for No. 2 Phillips, SE cor. NW NE, Section 5-23-5; Magnolia Petroleum Co. No. 5 Robedeaux, SW cor. SE SE, Section 32-23-3, rig on ground; No. 1 Ely, C NW SW NE, Section 4-22-3, rigging up; Watchorn Oil & Gas Co.'s No. 2 Diamond, C N half, NE NW, Section 4-22-3, cleaning out at 2,022 feet; No. 3 Diamond, C W half SW NE NW, Section 4-22-3, rigging up to drill deeper, old depth 2,950 feet.

Lincoln County Developments

The Pure Oil Co.'s test on the Leak farm, SE cor. SW, Section 12-14-4, Lincoln County, southwest of the discovery well in the Davenport Pool, made several flows of about 10 bbls. each from 6 feet of sand found at 3,728 feet. The well is being deepened.

J. C. Cook's No. 1 DeLasier, SE cor. SW SW, Section 15-14-6, made a 52-bbl. flow after being given a 10-quart shot. It was making 47 bbls. on the pump from sand at 3,003-3,072 feet.

The Skelly Oil Co. has a rotary rig up on No. 1 Ford, NE cor. Section 7-15-4. The Davenport Oil & Gas Co. has a rotary on No. 1, Lot 20, Block 40, C S half SE NW, Section 10-14-5, Davenport Townsite. Willis and others have abandoned at 3,405 feet their No. 1, Lot 3, Block 7, C N half NW SE NW, Section 12-14-6, Stroud Field.

The Pure Oil Co.'s No. 1 Stover, NW cor. NE SW, Section 7-14-7, Creek County, has a hole full of oil from sand encountered at 4,050 feet, and was drilling at 4,126 feet, still in the sand.

Kay County

Vernon Oil & Gas Co. is deepening No. 2 Brakenhouser, SW cor. SW SE, Section 17-29-1; they are at 1,540 feet at present; Blackwell Oil & Gas Co. is drilling at 1,290 feet in No. 4 Humprey, CEL NE NW SW, Section 10-27-1w.

The White Eagle Oil & Refining Co.'s No. 1 LeMar, C NW NW SE, Section 22-29-1w, made a small flow of oil from sand topped at 2,229 feet when it had been drilled 5 feet in.

Carter County

The Humble Oil & Refining Co. is drilling at 115 feet in No. 1 Hales, C NE NE SE, Section 28-1s-3w, Carter County. No. 2 Hales, C NE SE SE, Section 28-1s-3w, is rigged up. The Tidal-Osage Oil Co.'s No. 2 Parsons, C NE SW NE, Section 28-1s-3w, is drilling at 3,285 in sand, and flowing 140 bbls. The Cline Oil Co.'s No. 1 Ledbetter, CSE SW SE, Section 8-3s-2w, is spudding at 120 feet; Magnolia Petroleum Co. has a rig up, C NE NE NW, Section 3-2s-3w.

The Humble Oil & Refining Co.'s No. 2 Lusk, CNW NW NE, Section 33-1s-3w, got sand at 3,082-3,100 feet, and made 200 bbls. the first 24 hours; Wirt Franklin's No. 3 Brooke, C SW NW NW, Section 30-2s-3w, got sand at 2,295-2,327 feet and made 60 bbls. naturally from 2,315-2,327 feet. The Fox Petroleum Co. got a dry hole, center south half SW NE NW, Section 23-2s-3w, abandoned at 2,750 feet.

The Magnolia Petroleum Co.'s No. 19 Cruce, center north half NE NE, Section 16-4s-2w, Hewitt Field, found sand between 2,480 and 2,525 feet and produced 187 bbls. the first 24 hours, and 147 bbls. the second 24 hours.

Amerada Petroleum Corp.'s No. 3 Criner, E half NE NE SW, Section 20-5s-1, was drilling at 750 feet.

The Magnolia Petroleum Co.'s No. 19 school land, SE cor. SW SE NE, Section 33-1s-3w, is drilling at 150 feet.

The Magnolia Petroleum Co. has a rig up for No. 4 Jones, NW cor. NW SE, Section 14-1-3w, Garvin County.

Tulsa County Completions

Thompson & Black abandoned as dry No. 4 Johnson, C north half, NE Section 2-18-13, Tulsa County, at 2,160 feet. Green and others' No. 1 Harmon, C north half NE NW NE, Section 26-18-14, was abandoned as dry at 1,365 feet; A. J. Pettit and others have abandoned as dry No. 1 Childers, NW cor. NW NE, Section 10-17-14, at 1,430 feet. The Elk Oil Co.'s No. 2-A Smith, NW cor. NE SE, Section 29-20-30, wrs drilling at 650 feet; Broche and others' No. 2 Rogers, north half NW NW, Section 33-20-14,

(Continued on Page 136)

TO hold his own and establish a progressive, steady business in the face of direct competition, with the great oil corporations, is the aim of the progressive jobber. A brand of oil, nationally advertised and nationally known is an indispensable asset to him. His welfare and prosperity can best be served by allying himself with a reputable independent refiner, whose volume and capital are adequate to produce and advertise a high quality oil for nation-wide use.

Pennzoil *plus* Penn American

IF you and your company are sales-builders who can take charge of a territory and develop it successfully, we want to talk to you face to face and show you what fellow-jobbers in similar territories are accomplishing with the help of Pennzoil.

THE merger of *The Penn American Refining Company* and *The Pennzoil Company*, on November first, unifies thirty-eight years of Penn American refining experience and the complete facilities of its two modern refineries, with the marketing ability and sales-resources of the Pennzoil organization.

There is no change involved in the management or products.

To the man or company in a territory not yet developed as a Pennzoil market, who seeks a solid foundation on which to build a sound, steady jobber business, the Pennzoil jobber-franchise offers a unique and attractive opportunity.

Pennzoil is backed by two national advertising campaigns — first, Pennzoil's own forceful, aggressive national campaign, supplemented by local and direct-mail campaigns and an unusually complete service of dealer sales helps; second, the Pennsylvania Grade Crude Oil Association campaign which is selling fifteen million motorists of the nation on the basic idea of Pennsylvania Crude as the right motor lubricant. Pennzoil ties up closely with this campaign.

Behind Pennzoil is a reputation for making good. Firmly and unquestionably established on *actual, unduplicated performance*, this reputation has contributed to a record volume during the past year.

To jobbers and individuals who have energy and an ambition for steady rapid growth, we have to offer a most attractive proposition.

Write, wire or 'phone
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THE PENNZOIL COMPANY
"Pennzoil plus Penn American"
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STERLING
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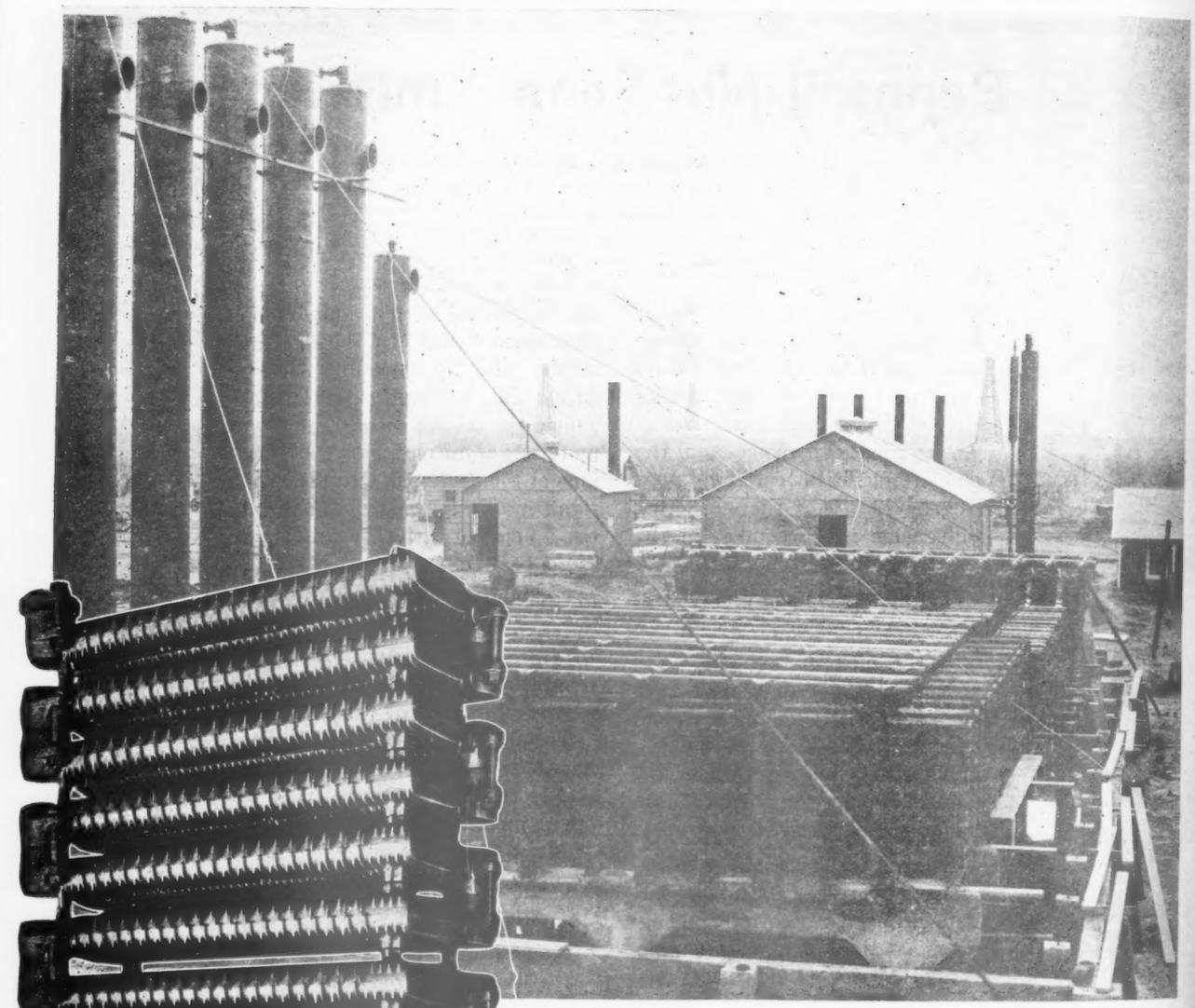


THE CHESTNUT & SMITH
PLANT IS EQUIPPED
WITH STERLING
OIL CONDENSING
SECTIONS

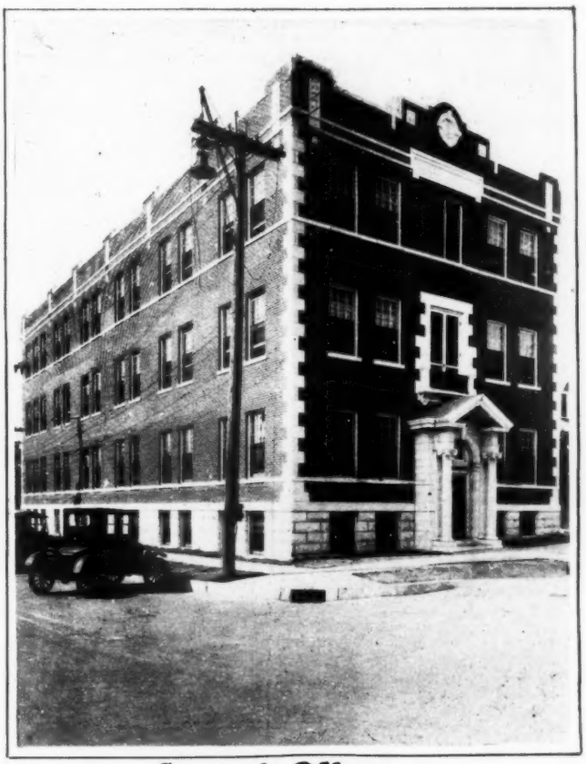
THE NATIONAL SUPPLY COMPANIES

HANDLING FIFTY MILLION FEET OF GAS DAILY
IN ONE PLANT

A Graphic Story of the manufacturing end of Petroleum's Youngest Industry in the most efficient and largest capacity plant, The Hanlon Gasoline Co. Number 2, of Breckenridge, Texas, one of fourteen owned and operated by the world's largest manufacturers of Natural Gasoline.

CHESTNUT AND SMITH CORPORATION, TULSA, OKLA.

Thomas Chestnut
Chairman of the Board



General Offices
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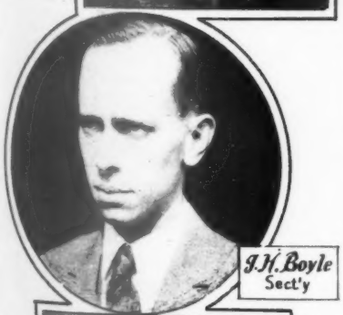
T. K. Smith
President

E. J. Hanlon
Vice President

D. E. Buchanan
Vice President



J. H. Boyle
Sect'y

A. F. Wood
Sales Manager

Harry Quinlan
Purchasing Agent

F. G. Yonker
General Superintendent

R. M. Coyle
Ass't General Superintendent

T. E. Burke
Traffic Manager

Marvelous Growth of the Natural Gasoline Industry

Not many people outside the oil industry know that in 1923 our natural (or casinghead) gasoline plants and our cracking plants produced close to 2½ billion gallons of gasoline. This is a little more than 30 per cent of all of the gasoline made in the United States.

And still fewer know what would have happened in 1923 if we had not had natural gasoline plants and cracking plants.

In 1895 there were only 300 automobiles in the United States—and up to that time the entire country had produced only 653,000,000 barrels of crude oil. We have produced more than ten times as much crude oil in the 30 years since the automobile arrived as we produced in the 36 years before it arrived. And this tremendous growth is due almost entirely to the automobile.

About 1905, or ten years after the arrival of the automobile, a few West Virginia and Pennsylvania pioneers began making gasoline from casinghead gas—but not until 1911 did the United States Geological Survey consider this new industry of sufficient importance to collect separate statistics of its production. The total output in 1911 was 7,400,000 gallons, or less than one percent as much as was made by straight run distillation.

In 1911, when the natural gasoline industry was getting a start, there were 639,000 automobiles in the United States. We produced that year 220,000,000 barrels of crude oil from which we made about a billion gallons of straight run gasoline. This billion gallons would have furnished each of the 639,000 cars with 1,500 gallons of gasoline for the year.

It is therefore quite obvious that the new industry—making gasoline from casinghead gas—faced a very serious situation. Not only was there plenty of gasoline without this new kind, but there were no generally-accepted "standard specifications" for the product. It was wild, and dangerous, and met bitter opposition from the refiners who as yet were making nothing but straight run gasoline.

In 1913 an event took place that marked another epoch in the development of the manufacture of gasoline. In that year a patent was granted to Dr. Wm. M. Burton on his cracking process. Dr. Burton's purpose was to "crack" gas oil into blending stock from which motor fuel could be made.

In 1913 we produced 248,000,000 barrels of crude oil from which we made about 1,250,000,000 gallons of straight run gasoline.

The same year there were 1,258,000 motor vehicles registered in the United States, which means that there was enough straight run gasoline made to supply each car with 1,000 gallons for the year, or more than twice as much as cars are using today.

In the struggle to build a new industry there is usually little cooperation. Each follows his own individual ideas as to plant equipment and plant operation, hence the product itself is nearly always the last thing to be standardized. And it was not until 1921, when the natural gasoline industry was faced with the imperative necessity for standardizing its product, that some of the leading producers met in Tulsa and organized the Association of Natural Gasoline Manufacturers.

During the term of its first President, Mr. Wm. M. Welch, and his successor, Mr. D. E. Buchanan, the industry has been pulled together and in a relatively short time put on a solid, substantial basis—probably with greater profit to the petroleum industry as a whole than to the natural gasoline industry itself.

There are today more than twenty times as many automobiles in the United States as there were in 1911. We are producing a little more than three times as much crude oil—and are making seven times as much gasoline.

We made 100 times as much natural gasoline last year as we made in 1911. Then, the entire investment in the industry, including the experimental work, did not exceed $2,000,000—today it probably exceeds $150,000,000. In number, there are today a few less natural gasoline plants than there were five years ago—but they are producing twice as much gasoline. The industry has very definitely passed its experimental stage and is now in "quantity production" where big plants, big organizations and ample finance are the dominating factors.

Of the several hundred companies making natural gasoline probably the largest is the Chestnut & Smith Corporation of Tulsa, Oklahoma. The fourteen plants of this corporation, and its closely associated interests, are today making in the neighborhood of 240,000 gallons of raw natural gasoline a day. In 1919 their 26 plants made 60,000 gallons a day. During August, 1924, they shipped 8,250,000 gallons of raw natural gasoline. Included in this were twenty solid trainloads, without doubt the largest trainload movement by any single company in the history of the industry. Their plans call for the shipment of 75,000,000 gallons during 1924. At this rate this one corporation is producing more natural gasoline than the entire United States produced in 1915.

Their largest plant, just now being completed by the Hanlon Gasoline Company, an associated interest, is located at Breckenridge, Texas—and the present development of the natural gasoline industry probably could not be more clearly visualized than by telling it with views of this company's newest and largest plant that is now making 50,000 gallons of natural gasoline a day.

Graphic Story of the Hanlon Gasoline Company's Plant No. 2, Breckenridge, Texas

Natural gasoline is made from casinghead gas by a series of operations based on temperature, pressure and the absorbing power of mineral seal oil for gasoline in its vapor state. Beginning with the rich gas as it leaves the oil well, the following pictures trace it through each of the operations until, as sparkling gasoline, it goes to the storage tank, ready for shipment.

All photographs without credit line are by Walton's Studios, Breckenridge, Texas.

Casinghead of a flowing oil well. Instead of the old, inefficient method of trying to separate the "casinghead gas" from the oil at casinghead, the most efficient present method is to let the oil and gas flow together to a separator, as shown in Fig. 3.

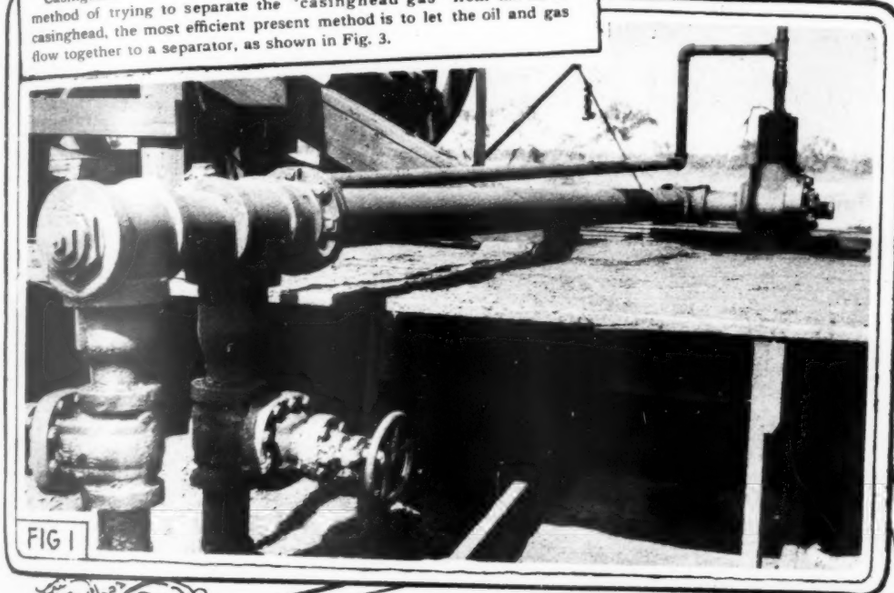


FIG 1

Test Car, Latest Type. When new oil wells are drilled in, testing apparatus of this kind is used to determine whether the casinghead gas contains enough gasoline to justify building a plant. Also used to make regular tests (usually each three months) of the gasoline content of wells or groups of wells as the basis of payment for the casinghead gas. This car, with equipment complete cost about $5,000. The first testing outfit was built by Mr. Smith about 1908 out of a beer pump, cost about $25, and was carried on his back, from well to well, in making tests. The next year he mounted an outfit costing about $300 on the back of a car—and from these humble beginnings the present type car has been developed. The corporation buys and pays for billions of cubic feet of gas a year on the results of tests made with these cars.

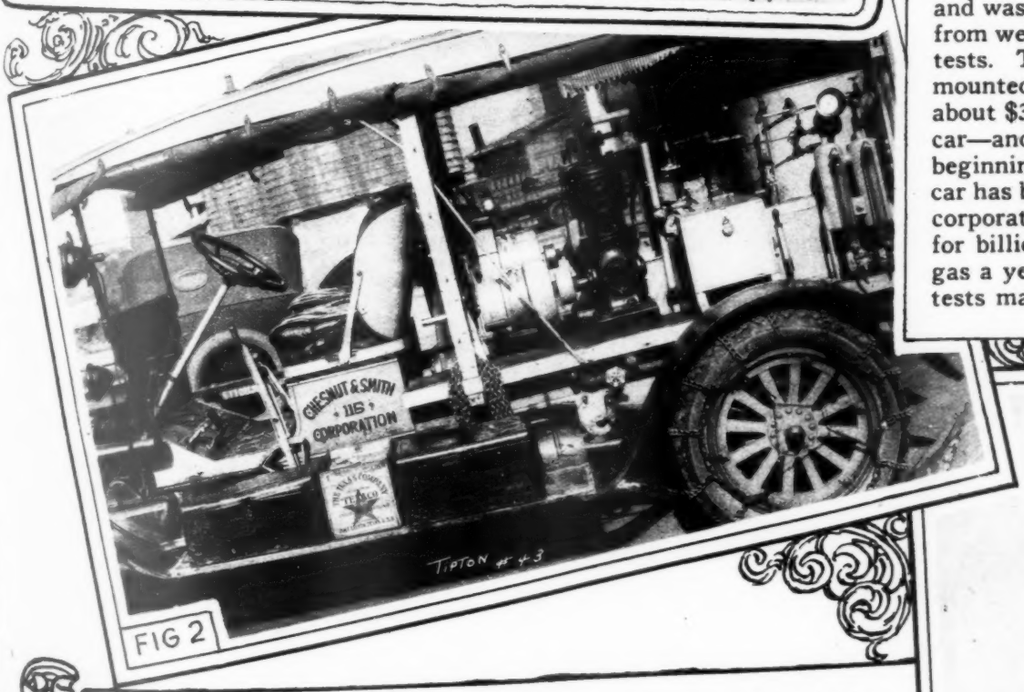


FIG 2

FIG 3

Smith Oil and Gas Separator. Invented and perfected by Mr. T. K. Smith, President of the Chestnut & Smith Corporation. First used in the Ranger (Texas) Field. The No. 1 type is 5 feet in diameter, 16 feet high and will handle 5,000 barrels of oil and 10,000,000 feet of gas in 24 hours. It removes all of the oil from the gas, delivering the oil to vapor-tight tanks in which its original gravity is maintained. The separator also removes all of the gas from the oil, delivering the gas to the pipe lines as shown in Fig. 4.

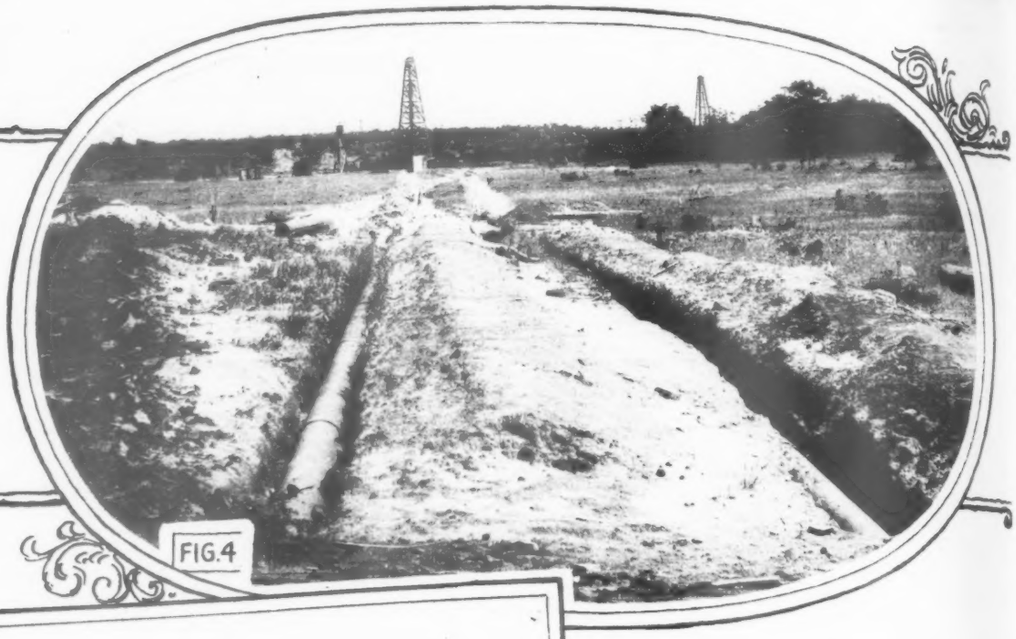


FIG.4

Gas pipe line leading from Separator shown at left of derrick. If the well pressure is strong enough this pipe line leads direct to the Scrubbers shown in Fig. 8—if not, the line leads to the Booster Plant shown in Fig. 5.

FIG.5

Building on left contains three twin booster units as shown in Fig. 6. Building on right houses the auxiliary equipment shown in Fig. 7. At right end of picture note scrubber that gives the gas a preliminary cleaning by removing any dirt, oil or water that it may contain.

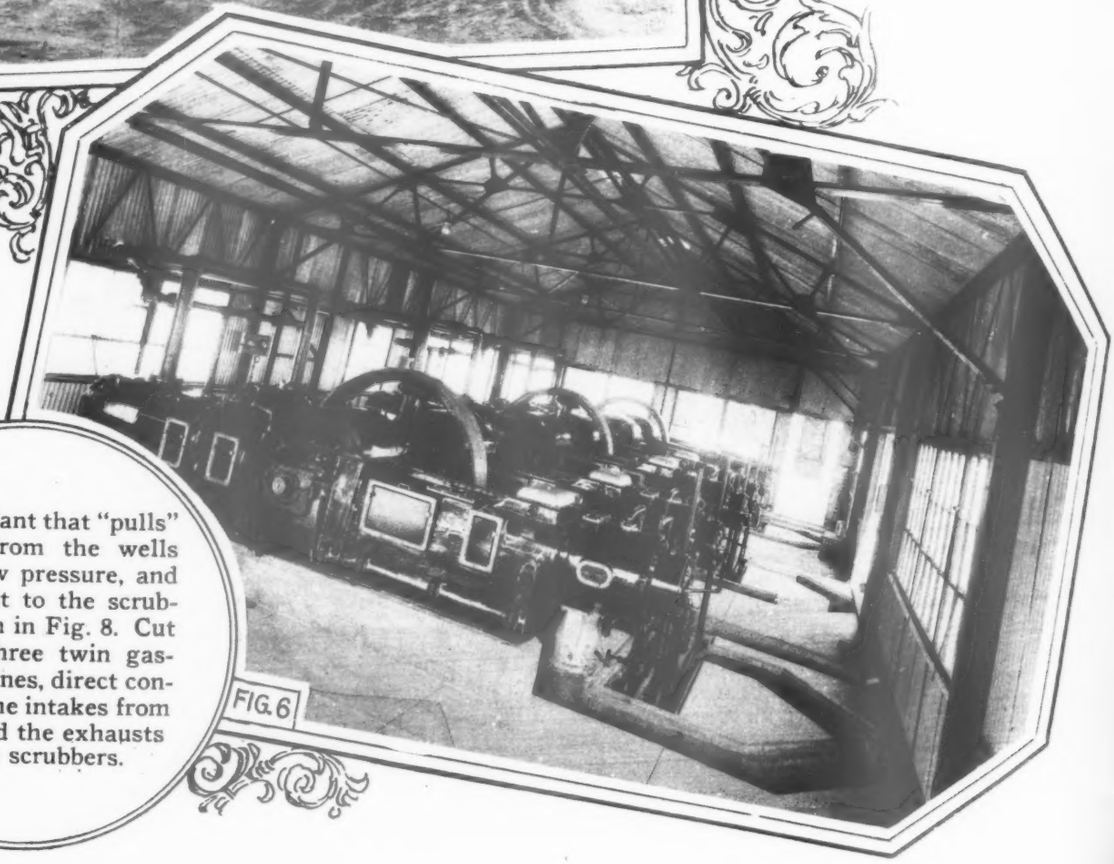


FIG.6

Booster Plant that "pulls" the gas from the wells having low pressure, and "pushes" it to the scrubbers shown in Fig. 8. Cut shows three twin gas-fueled engines, direct connected to the intakes from the field and the exhausts to the scrubbers.

FIG 7

Auxiliary Power Building. Gas engine, direct connected to line shaft. Drives water circulating pumps and generator that furnishes light for the entire plant.

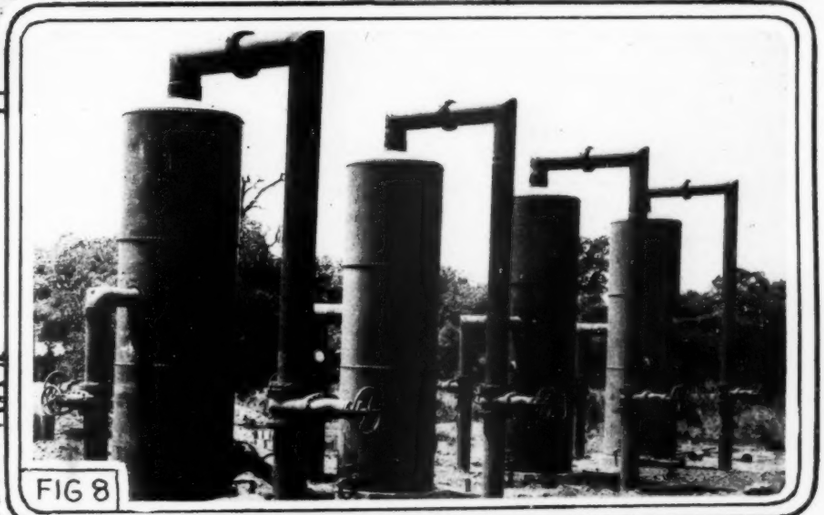


FIG 8

Scrubbers for removing dirt, water, oil and condensate from the gas before it goes to the compressors shown in Fig. 10. Pressure gauges are shown above gate valves. Gas lines lead direct to the compressors.

FIG 9

Gas lines carrying cleaned gas from the scrubbers, shown in Fig. 8, to the compressors in building at left. Inside view of this building is shown in Fig. 10.

Compressor Room of Main Building. Twin gas-fueled engines, belt connected to low-stage compressors operating at 50 pounds pressure. The old "two-stage, high-pressure compressors" with a low-stage end (50 pounds) and a high-stage end (250 pounds) have been almost entirely replaced by "low-pressure absorption" equipment in which the high-stage end of the compressor has been replaced by an absorption tower in which the gasoline is absorbed out of the gas instead of being compressed out.

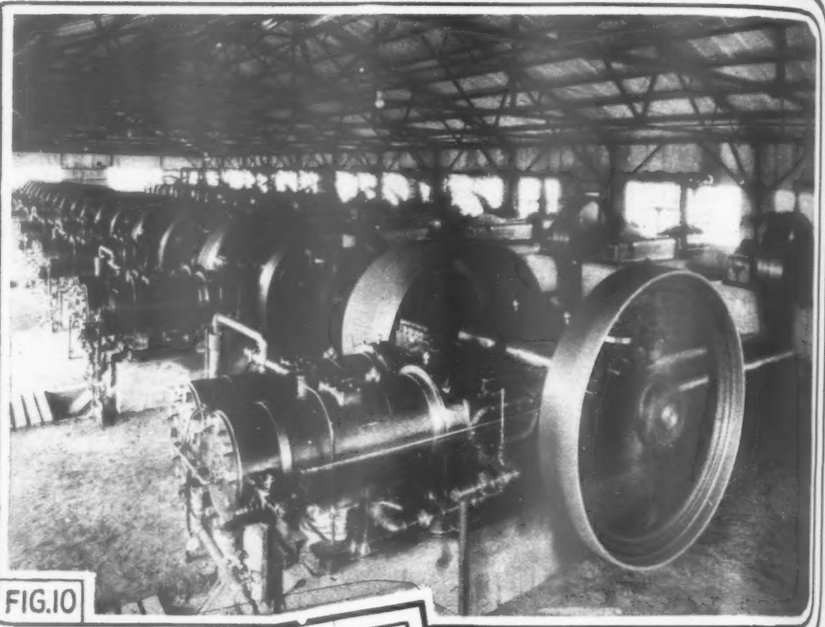


FIG.10

Louvre House containing cooling coils, or condensors, through which hot gas from the Compressors (Fig. 10) flows. Louvres prevent blowing away of water which is sprayed over the condensors, as shown in Fig. 12. After the hot gas is cooled it passes to the four Absorption Towers shown at left of Louvre House.

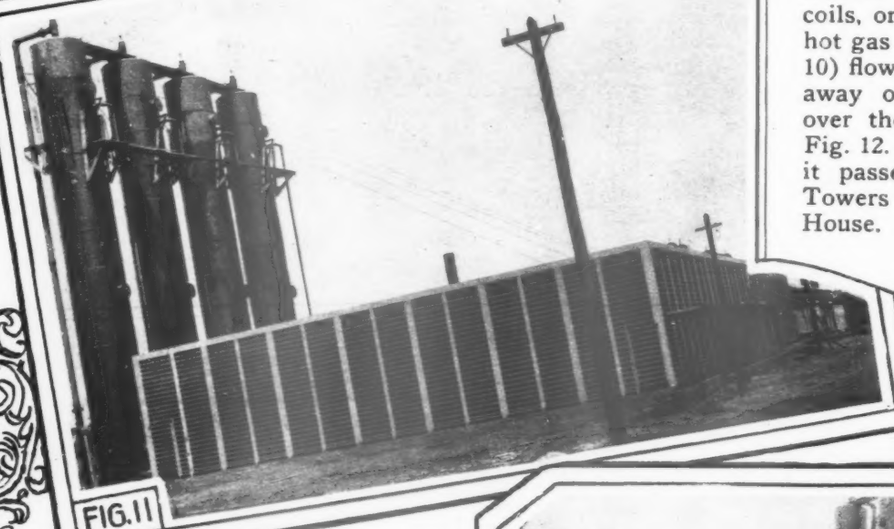


FIG.11

Inside view of Louvre House, showing condensor coils with an aggregate cooling surface of hundreds of thousands of square feet. Hot gas from compressors (Fig. 10) is cooled while passing through these coils, and such gasoline as condenses at the temperature thereby obtained, is trapped out into accumulator tanks, the uncondensed gas passing from these condensors to the absorption towers.

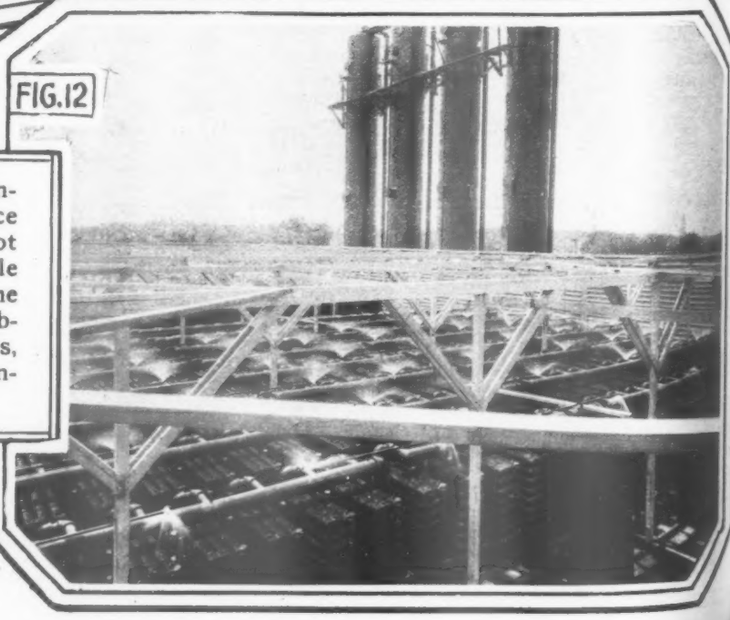


FIG.12

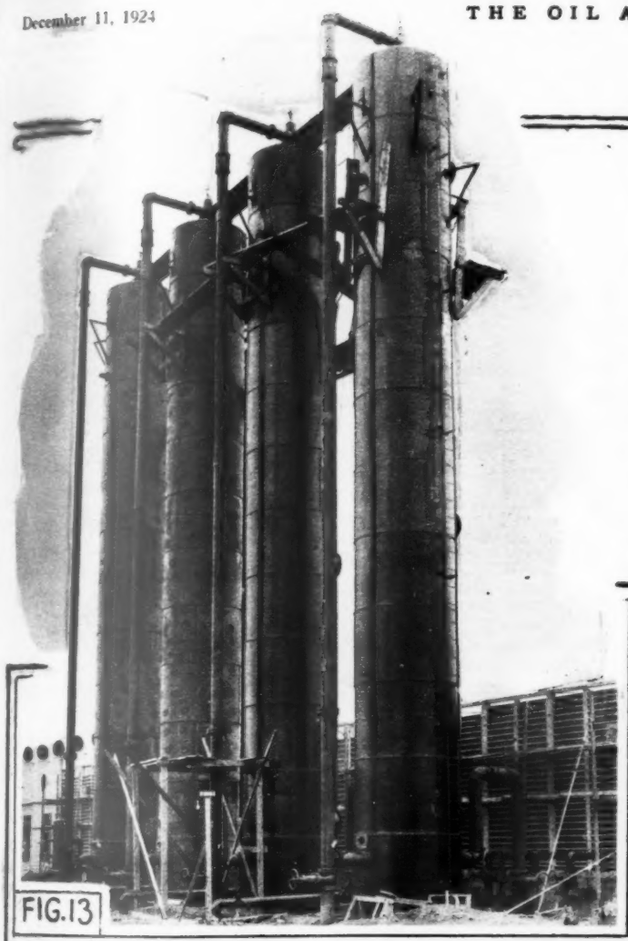


FIG. 13

Absorption Towers, 8 feet in diameter by 60 feet in height. Filled with screen baffles spaced 8 inches apart. Mineral seal oil enters the towers at the top and, as it falls, is broken by the screen baffles into myriad streams, drops and sprays, and leaves the towers at the bottom. Gas, rich with gasoline vapor, enters the towers near the bottom and, as it ascends, mixes thoroughly with the films and sprays of the mineral seal oil, which absorb practically every trace of gasoline vapor. The gas, stripped of its gasoline vapor, leaves the towers near the top, and is now called "residue" gas. Most plants deliver the residue gas to the leases from which the rich gas was originally taken, and where it is used for power, heat or light. In this instance the residue gas is delivered to Public Service Companies. See Fig. 22.

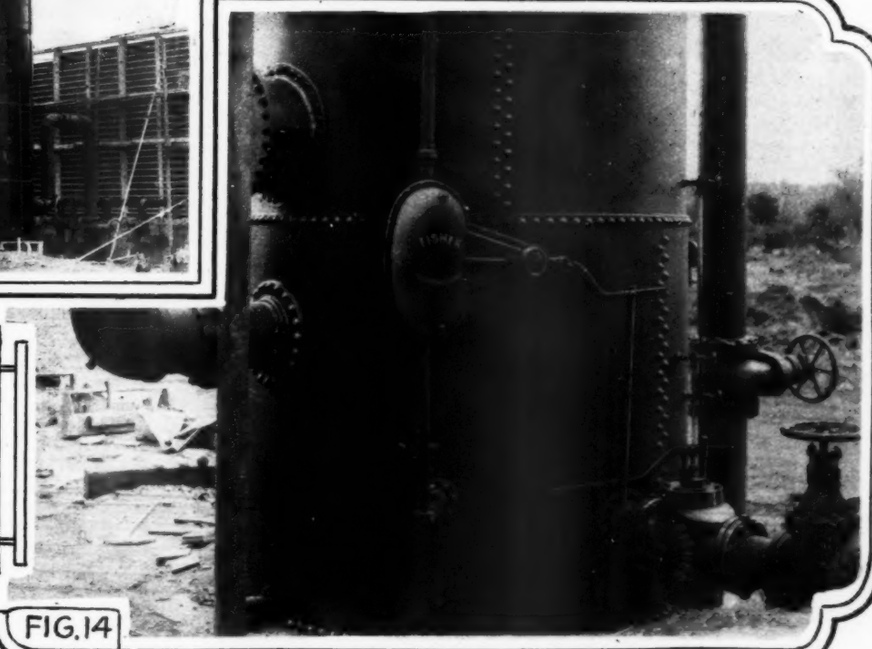


FIG. 14

Controls on Absorption Towers. At right, near bottom, is mineral seal oil outlet whose delicately adjusted valve (between tower and gate valve) is actuated through connection with the external arm of the float inside the tower.

FIG 15

Heat Exchangers. The 9 large pipes (12½ inches in diameter) have a total length of over 1,150 feet. They contain over 76,000 feet (or almost 15 miles) of 1-inch pipe. Hot mineral seal oil from the still (Fig. 17) flows through the large pipes in one direction, while the cool oil from the absorption tower flows through the small pipes in the opposite direction. The hot oil leaves the still at 450 degrees Fahrenheit, while the cool oil leaves the absorption towers at about 85 degrees. In passing each other in the heat exchangers the hot oil is cooled and the cool oil is heated.

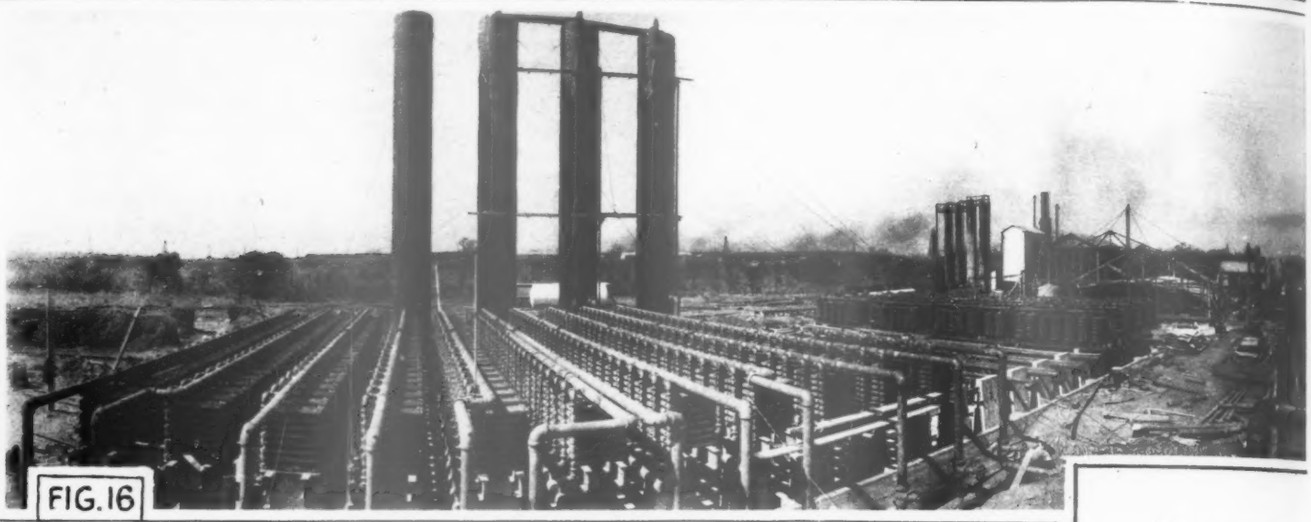


FIG. 16

Distillation System, where the absorbed gasoline is removed from the mineral seal oil. At left, next to tall smokestack, is a Vertical Still in which hot oil from the Heat Exchangers is heated to 450 degrees and the gasoline removed by evaporation. The vapors, leaving the top of the still, enter the horizontal Separator Tank (center) from which they go to the vertical Knock-Out Tower (right.) The heavy ends are "knocked back" to the still while the light ends pass to the water-spray-cooled condensors, as shown in Fig. 16

Panoramic view — left and right, above — showing the tremendous condensor capacity required by this plant. The hot vapors from the distillation system, Fig. 17, are cooled and lique-

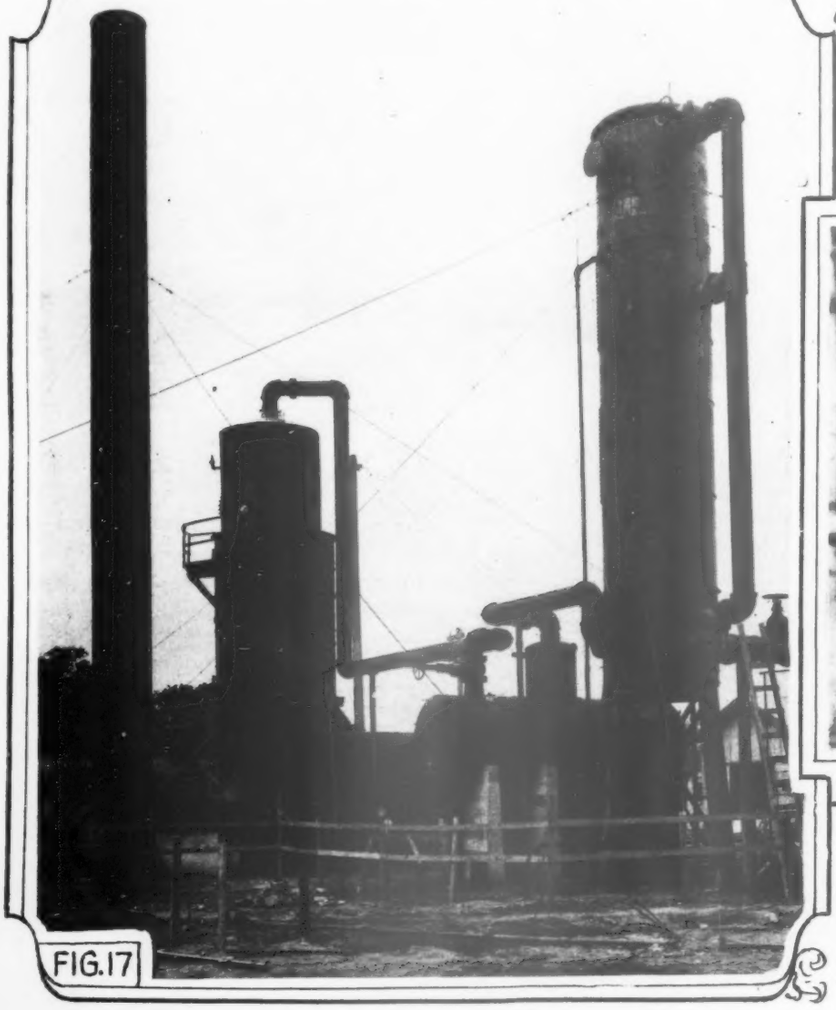


FIG. 17

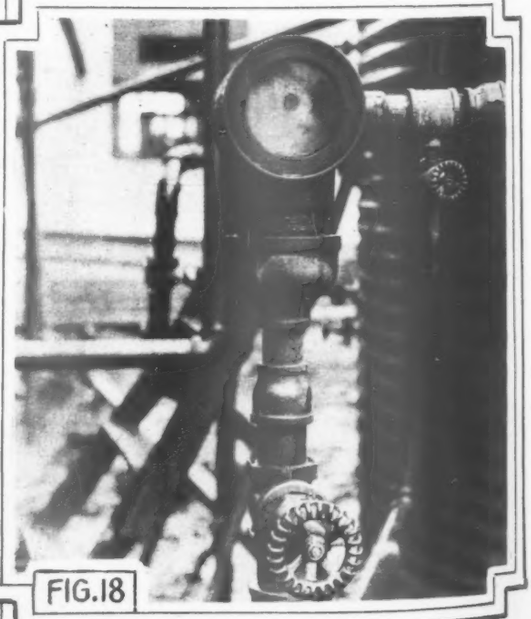
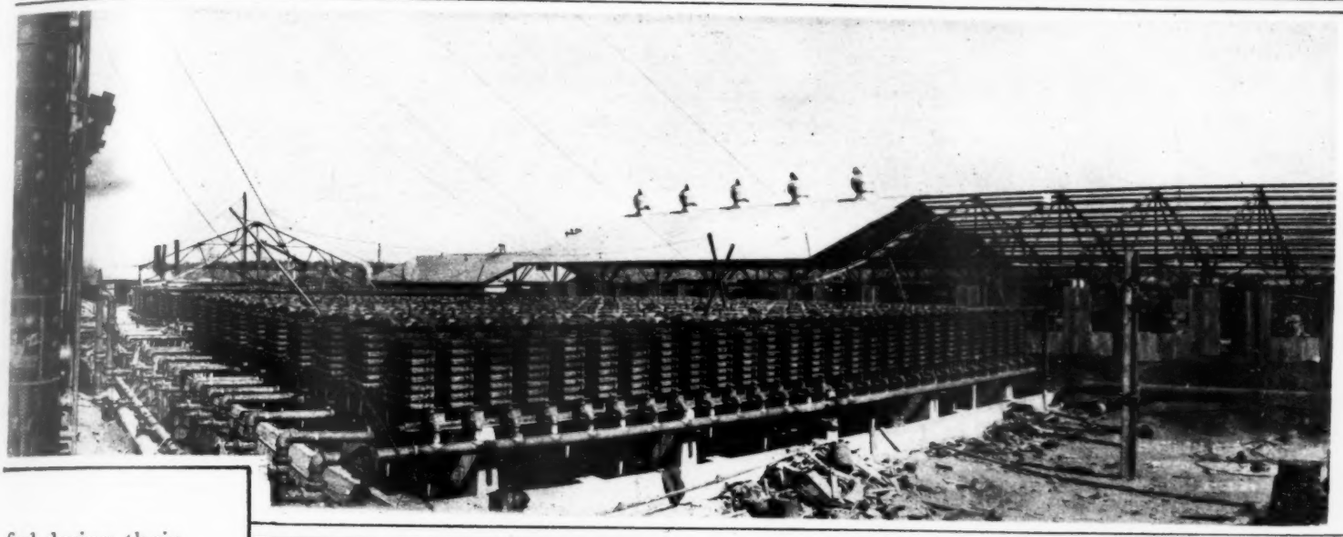


FIG. 18

Look Box, through which the cool, pure, raw natural gasoline may be inspected as it flows from the point of its liquefaction (Fig. 16) to the storage tanks (Fig. 19).



fied during their passage through this condensor system and leave in the form of natural gasoline, which passes through Look Boxes, Fig. 18, on its way to the Storage Tanks, Fig. 19.

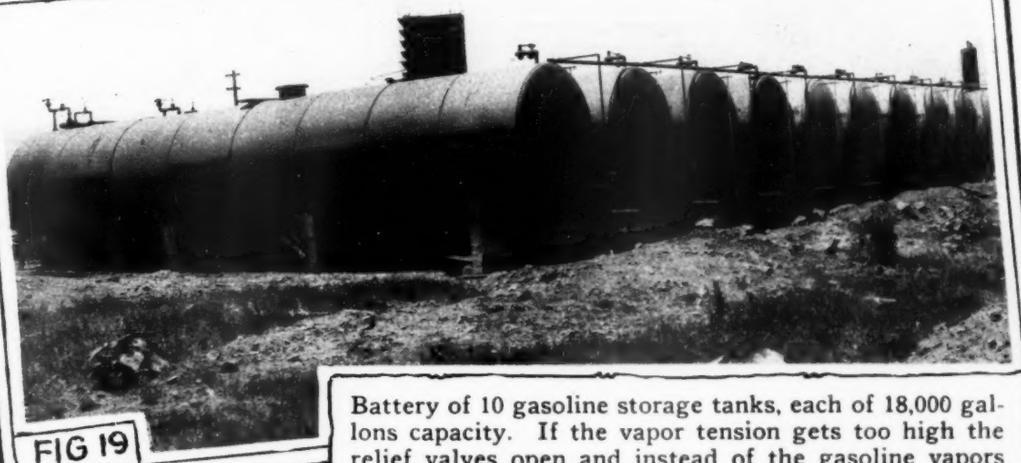


FIG 19

Battery of 10 gasoline storage tanks, each of 18,000 gallons capacity. If the vapor tension gets too high the relief valves open and instead of the gasoline vapors wasting into the air, the vapor lines return these vapors to the plant.

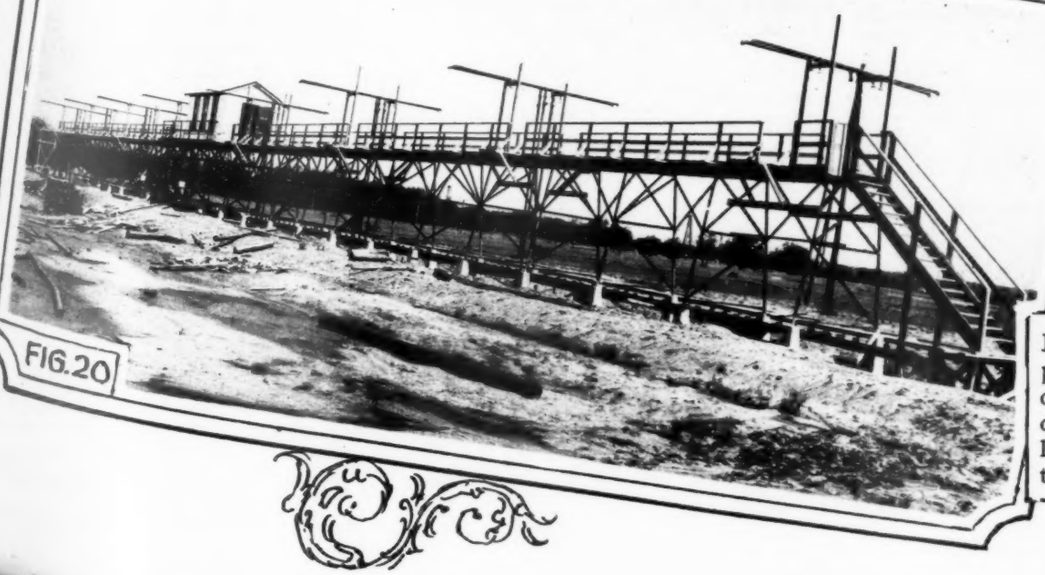


FIG.20

Loading rack with capacity for 8 tank cars on each side. A total of 16 cars can be loaded at the same time.

The Chestnut & Smith Corporation operates a "fleet" of 750 tank cars. It is estimated that in 1924 these cars will travel a total of over 12,000,000 miles—or the equivalent of 480 times around the world.

FIG 21

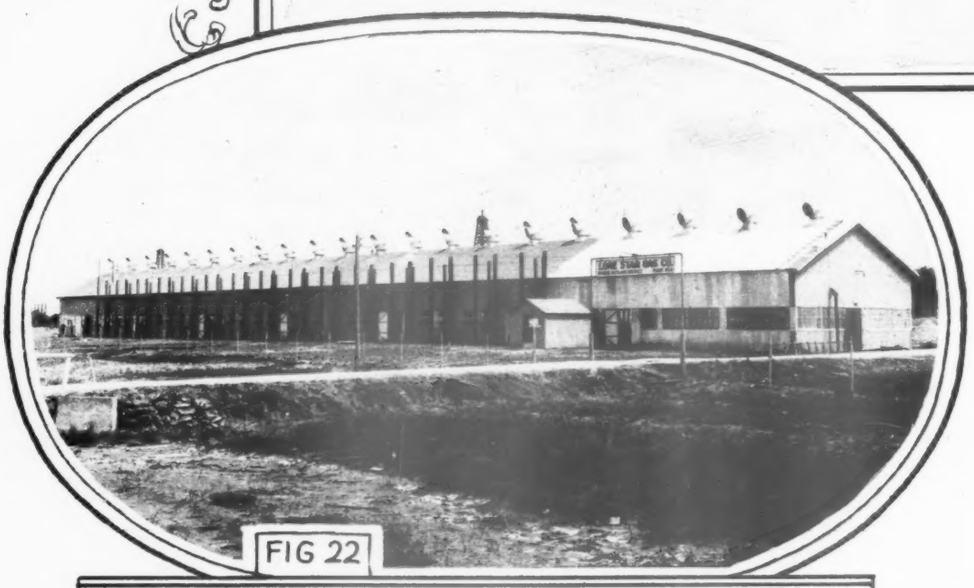


FIG 22

The completed plant, with a capacity of 50,000 gallons of raw natural gasoline a day. This one plant can make, in one year, 50 per cent more natural gasoline than the entire output of the United States in the year 1912. From a quality standpoint the output of the 14 Chestnut & Smith plants more than meets the standards established by the Specifications Committee of the Association of Natural Gasoline Manufacturers.

The "lean" gas from the Absorption Towers (Fig. 13) is either returned to the leases or delivered to Public Service companies whose compression plants, like the one illustrated above, raise the pressure sufficiently to carry the gas to their industrial and domestic customers in the large consuming centers.

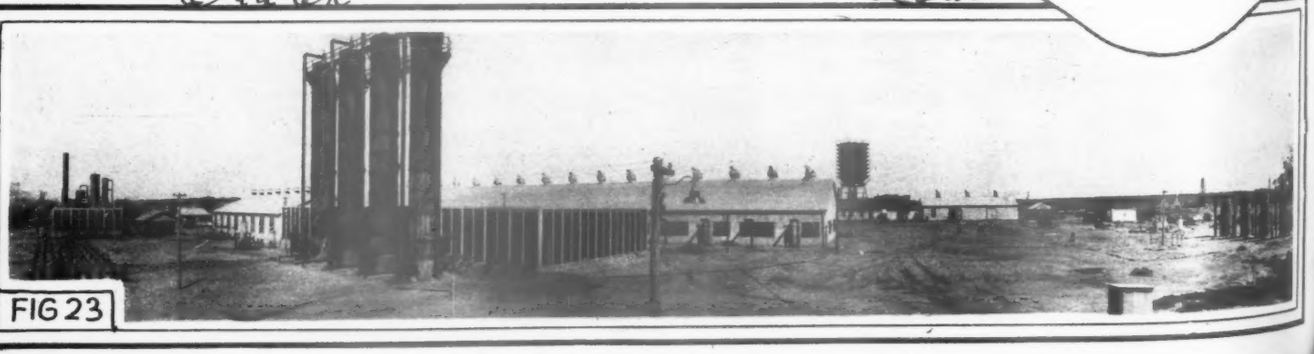
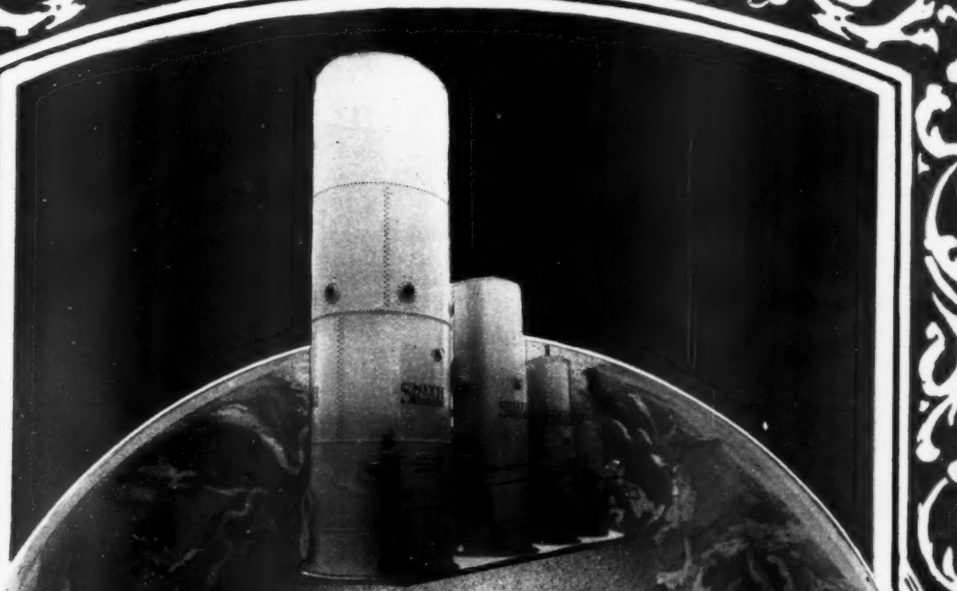


FIG 23



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California Office
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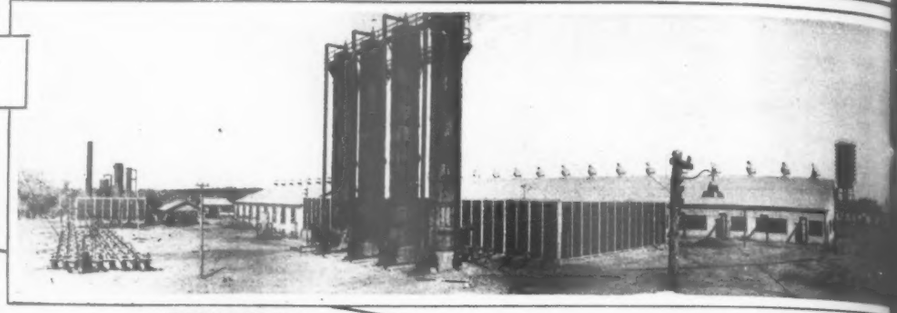
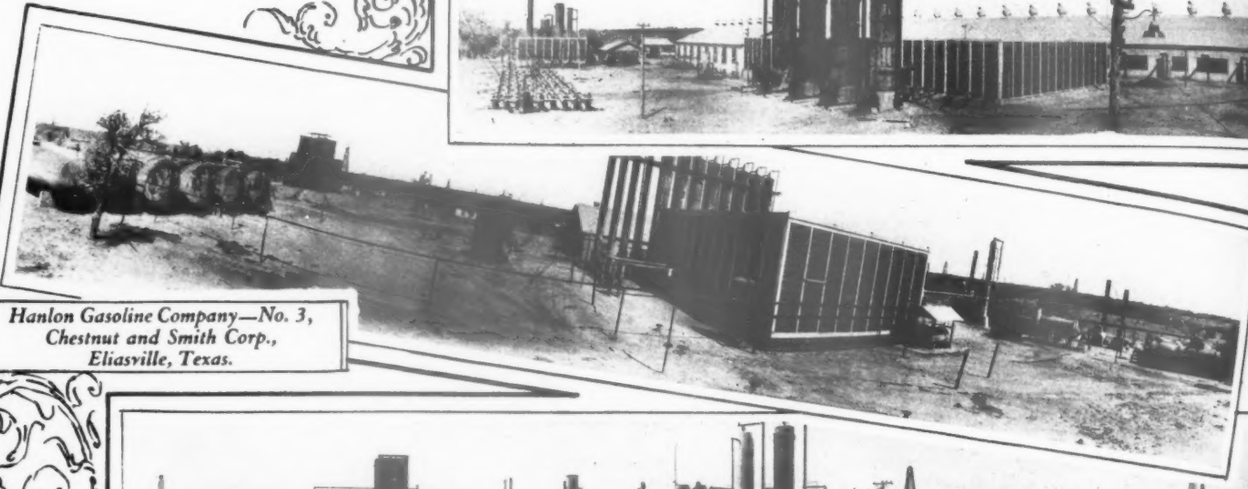
Texas Office
4837 Swiss Ave., Dallas, Texas

London Office
Perkins MacIntosh Petroleum Tool & Boring Co., Ltd.
25 Bishopsgate
Cable Address: "Oleborers" London

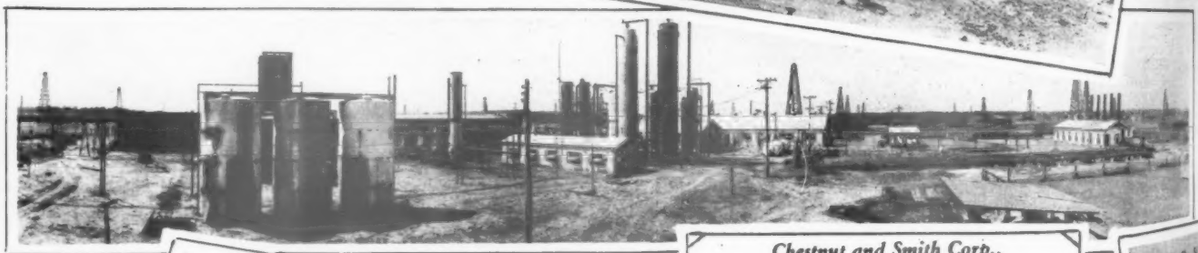
A Group of Chestnut and Smith Plant



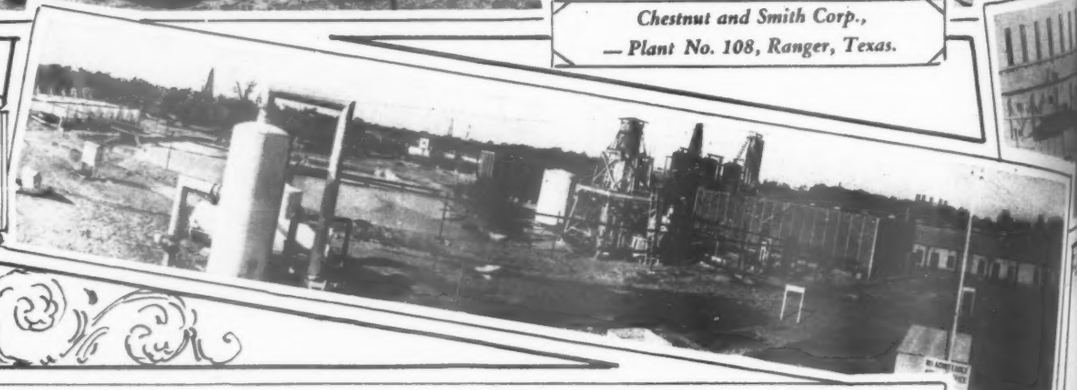
Hanlon Gasoline Company—No. 2, Chestnut and Smith Corp., Breckenridge, Texas.



Hanlon Gasoline Company—No. 3, Chestnut and Smith Corp., Eliasville, Texas.



Chestnut and Smith Corp., — Plant No. 108, Ranger, Texas.

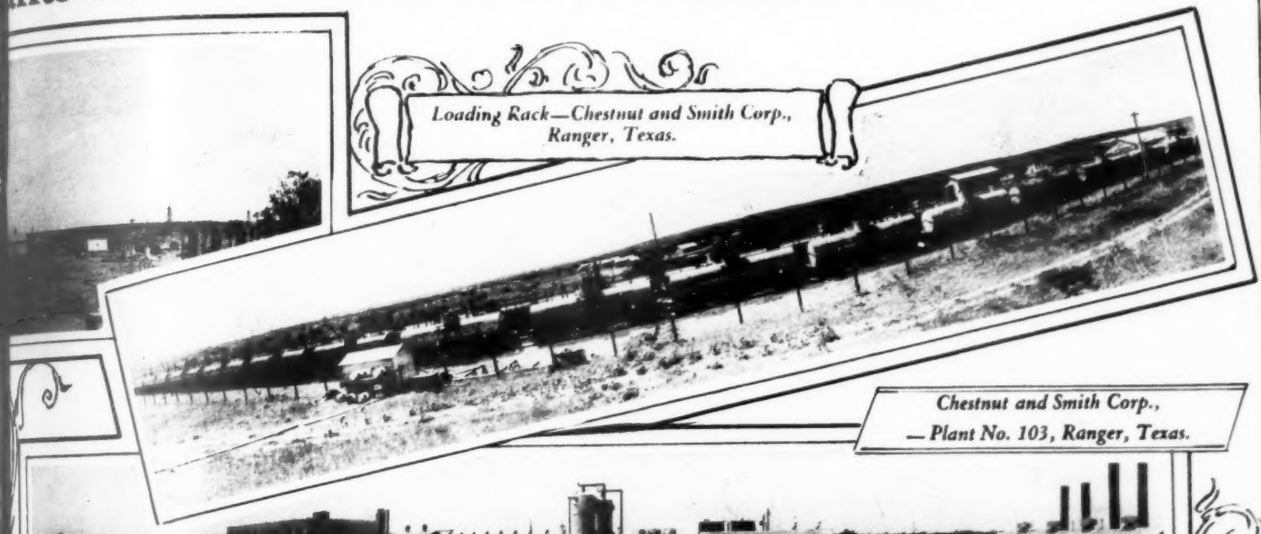


Shields-Kingsmith, Chestnut and Smith Corp., Breckenridge, Texas.

Chestnut and Smith Corp., — Plant No. 107, Ranger, Texas.

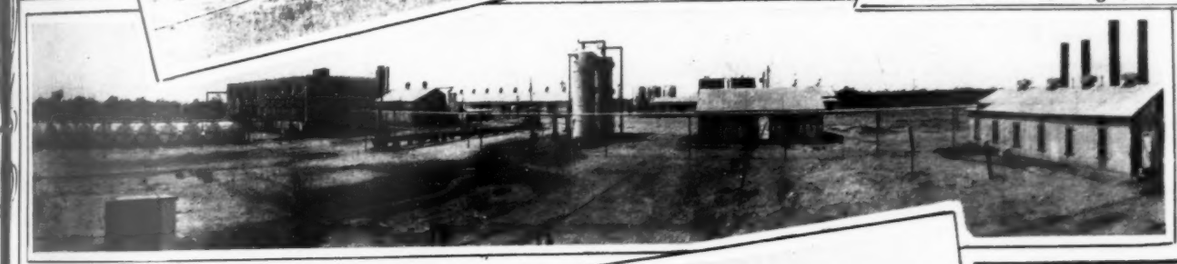
Chestnut and Smith Corp., — Plant No. 101, Ranger, Texas.

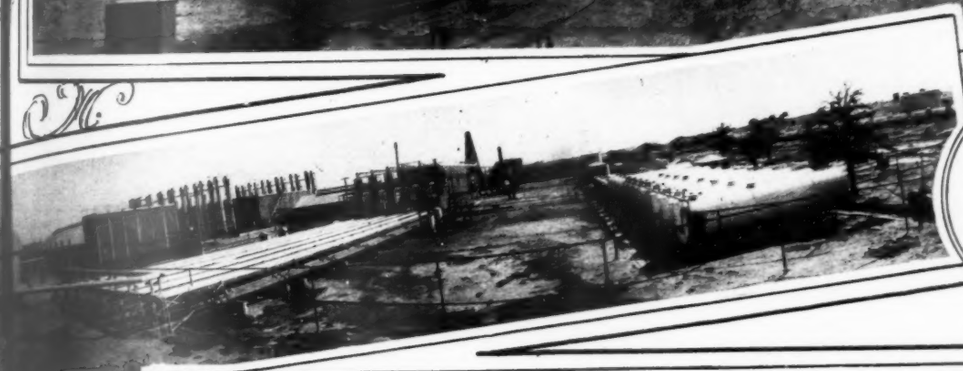
nts in the Mid-Continent Field



Loading Rack—Chestnut and Smith Corp., Ranger, Texas.

Chestnut and Smith Corp., — Plant No. 103, Ranger, Texas.

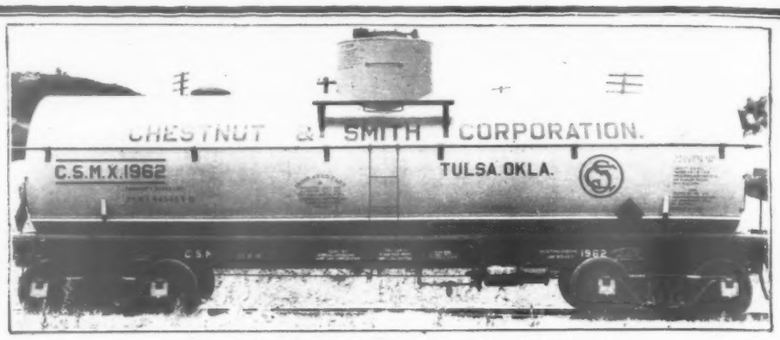




Brooks and Hanlon, Inc., Breckenridge, Texas.

Chestnut and Smith Corp., — Plant No. 109, Eastland Texas.

Chestnut and Smith Corp., — Plant No. 9, Glenpool, Okla.



First insulated tank car built for Chestnut & Smith. Still in operation.

For Shipping Casinghead Gasoline

The problem of shipping high volatility gasoline, such as that produced by the casinghead process from natural gas, required a specially planned and designed tank car.

This problem we solved, after countless tests and experiments, by producing an insulated tank car which provided the proper protection for such a gasoline, insuring safe shipments.

The original car built for Chestnut & Smith is still in operation, as are many others that we have built since to take care of their rapidly growing business.

This is only one of many shipping problems our engineers have met and conquered. We build tank cars of all descriptions for sale or for lease. We maintain a fleet of nearly 13,000 cars for leasing. Let us know your needs. Consult any of our offices. Let us repair your tank cars now before prices advance.

GENERAL AMERICAN TANK CAR CORPORATION

General Offices: 111 West Monroe Street, Chicago, Ill.

Eastern Office:
17 Battery Place
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Mid-Continent Office:
502 Cosden Bldg.,
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Pacific Coast Offices:
Rialto Bldg.,
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Plants at:
East Chicago, Ind.;
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(Near Tulsa)

Situated in Milwaukee, our mills are ideally located to serve the Oil Refineries in their requirements of seamless steel tubing.

Send us your inquiries.

GLOBE STEEL TUBES CO.

MILLS: MILWAUKEE, WIS.

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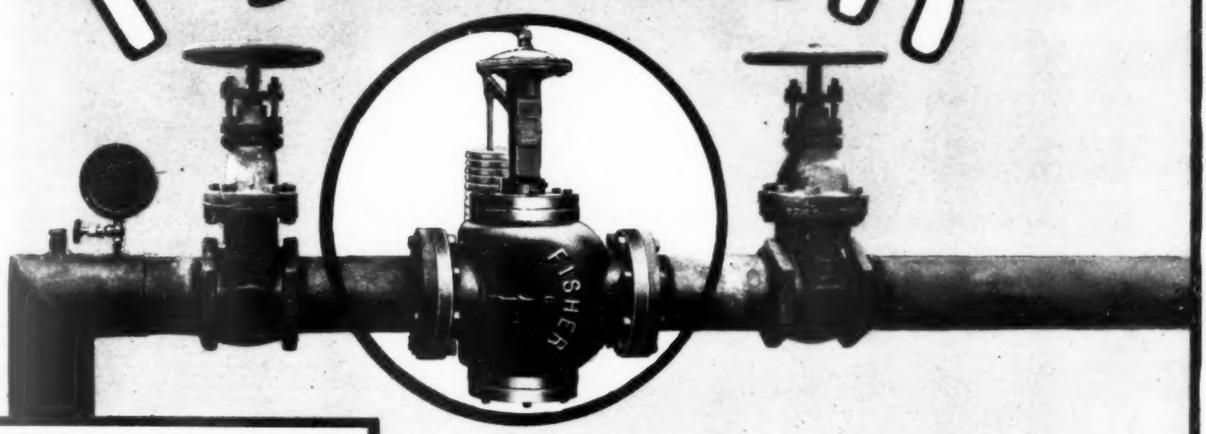

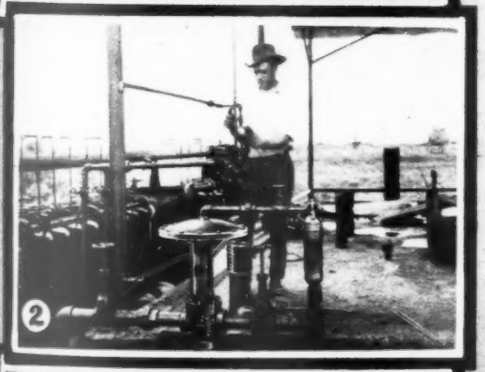

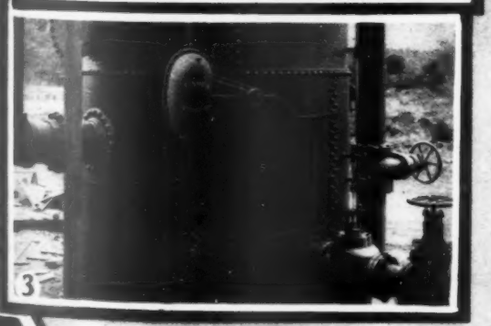

Where There's *Real* Work to be Done

IN the early nineties the models of FISHER equipment received gold medals at the World's Fair in Chicago.

The good design and the same conscientious workmanship that first brought prominence to FISHER equipment, today give FISHER installations outstanding reliability — and make them the choice *where there's real work to be done.*

No. 1 shows FISHER Liquid Seal Controllers (Type 227A) used in any tanks where definite levels of liquids are to be maintained.

No. 2 is a gas regulator (Type 210) which can be used to reduce any initial pressure up to *125 pounds down to one ounce.* This regulator makes this reduction in a *single* operation.

No. 3 is a liquid controller (Type 227A) on a Smith Oil and Gas Separator. Maintains a positive oil seal preventing gas blowing through into stock tanks.

Call upon our Engineering Department for any data, plans or suggestions in connection with your installation and operating problems. Descriptive literature forwarded gladly on request.

The Fisher Governor Co.

Marshalltown, Iowa

Competent distributors in all supply centers

OIL REFINERY TANKAGE

WRITE OR WIRE FOR PRICES MATERIAL IN STOCK

CRUDE & STEAM STILLS, CONDENSER BOXES, AGITATORS, TOWERS, ACID TANKS, HEAT EXCHANGERS, SEPARATOR TANKS, ETC.

PIONEER

TANK & BOILER Co.

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STEEL WAREHOUSE DEPT.

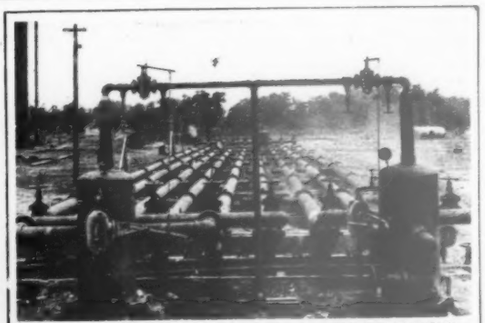
IMMEDIATE SHIPMENTS AT STANDARD WAREHOUSE PRICES

STEEL PLATES, BARS, ANGLE IRON, BEAMS, SHEET IRON, BOILER TUBES, RIVETS, TANK FLANGES, FLOOR PLATES, SMITHING COAL, & COKE.

PIONEER'S REPUTATION

AND ABILITY TO MEET THE MOST EXACTING REQUIREMENTS SECURES FOR THEM A PLACE IN THE HANLON MASTER PLANT

"PIONEER" BOTTLE TIGHT GASOLINE STORAGE TANKS USED IN THE HANLON PLANT



PIONEER-BUILT HEAT EXCHANGERS AND SCRUBBER TANKS USED IN THE HANLON PLANT

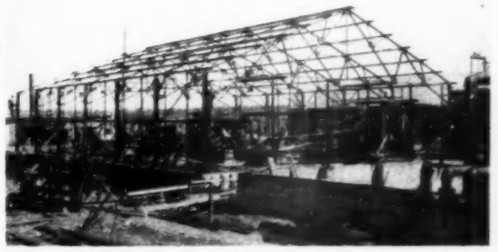
MODERN
Steel Buildings
FOR
World's Largest Gasoline Plant

BEST AVAILABLE

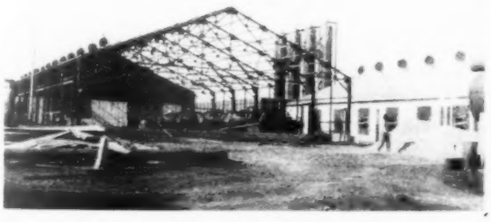
INDCO

SELECTED OF COURSE

Our Husky Crew "know their eggs"



Auxiliary Building 50 feet x 96 feet. Erected over running machinery without shutting down.



Main Building 60 feet x 278 feet.

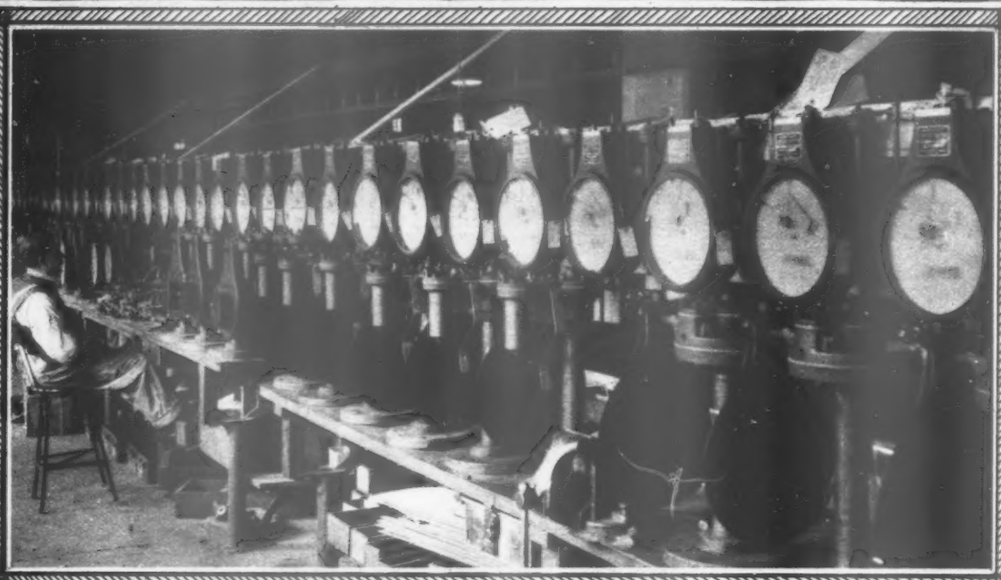
Booster Station. A 2-bay extension already being added.

INDCO buildings are easily extended, as was the one shown above.

Our service met the large requirements of the Hanlon Gasoline Plant satisfactorily.
We can serve you, be your requirements large or small.
We are steel building specialists.

Industrial Construction Company
Tulsa, Okla.

METRIC *Orifice* METERS



39 Metric Orifice Meters undergoing final tests at our factory before being sent for installation on the New Magnolia Gas Line, which will run between the Louisiana oil fields and Beaumont, Texas

TWO MORE BIG ORDERS

The Magnolia Gas Line Interests chose Metric Orifice Meters as a part of their meter equipment, because of their accuracy, dependability and simplicity of operation.

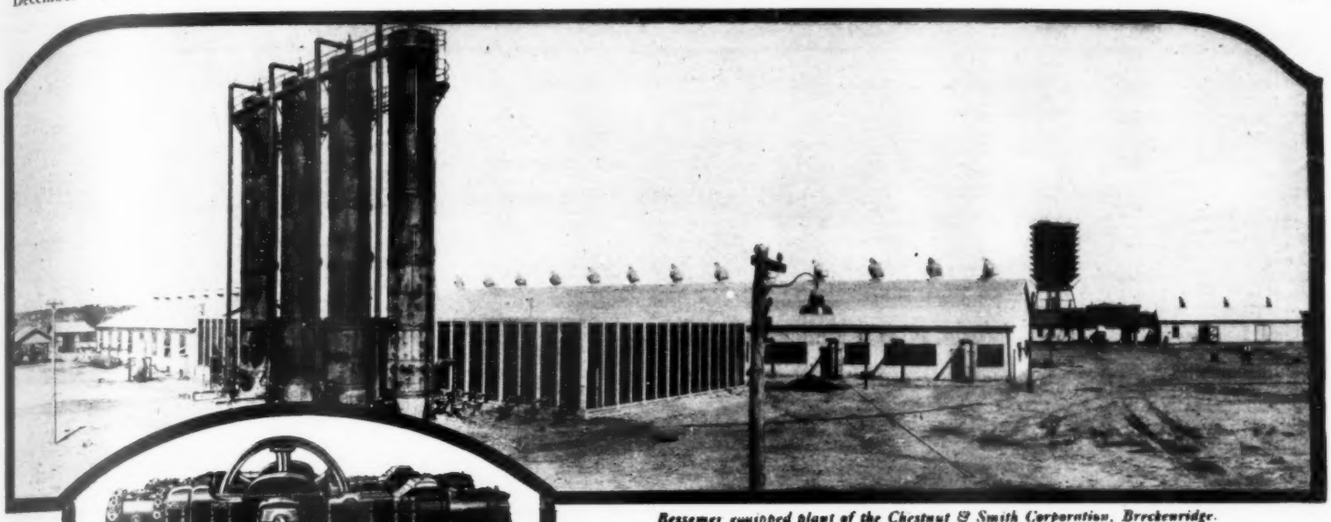
Metric Orifice Meters are assuming new and important responsibilities every day, and are performing with a marked degree of satisfaction and economy

For instance, the master control meters, for both gas and liquids, at the new, big Hanlon plant, recently completed by Chestnut and Smith at Breckenridge, Texas, are Metric Orifice Meters, of course.

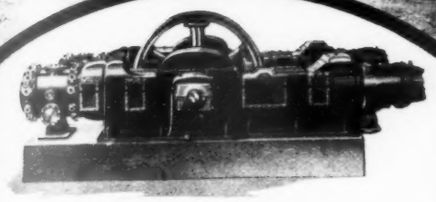
Write for our new Bulletin No. 120, containing interesting facts about Orifice Meters. It is just off the press and will be mailed at your request. Address Metric Metal Works, Erie, Pennsylvania.

WESTCOTT & ORBIS
SALES SERVICE
TULSA DALLAS LOS ANGELES

METRIC METAL WORKS
OF THE AMERICAN METER COMPANY INC.

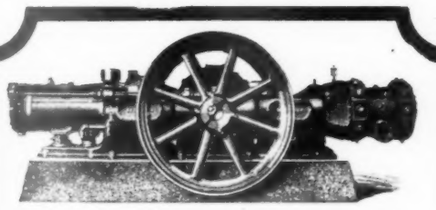


Bessemer equipped plant of the Chestnut & Smith Corporation, Breckenridge.



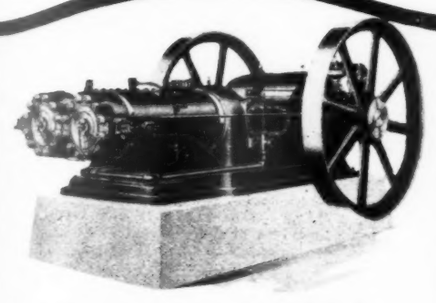
Bessemer Type Ten Compressor

A thoroughly tested unit incorporating the latest engineering improvements in compressor design. All parts easily accessible, with wide adjustments for wear. 80 H.P. Single and 165 H.P. Twin.



Bessemer Type VIII B Compressor

Direct gas engine driven compressor of proven efficiency in hundreds of gasoline plants. The standard of the Natural Gasoline Industry.



Bessemer Commercial Gas Engine

An ideal power unit, built with crosshead construction and enclosed crankcase. Furnishes clean, quiet, dependable power at remarkably low cost.

11,085 Bessemer Horsepower operating in Chestnut & Smith plants

FROM their first small plant in Glenn Pool to their huge new plant at Breckenridge, Bessemer equipment has been widely used by the Chestnut & Smith Corporation.

In fourteen modernly equipped plants they are operating 11,085 H. P. of Bessemer equipment, convincing evidence of the amply-proven economy and the continuous dollar-saving operating efficiency of Bessemer Gas Engines and Compressors.

The Bessemer-equipped plant is assured maximum operating efficiency, minimum depreciation and lowest upkeep cost—that's why Chestnut & Smith and the scores of other operators standardize on Bessemers. A heavy percentage of the entire Natural Gasoline Industry is Bessemer-Equipped.

Write for complete catalogue describing Bessemer equipment. Whether you require a single compressor or a complete plant, the experience of skilled Bessemer engineers is at your service.

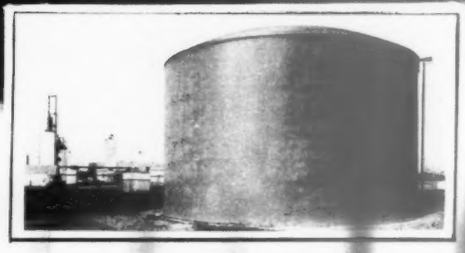
THE BESSEMER GAS ENGINE COMPANY
52 York Street ⁘ ⁘ Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Pays for itself in a few months

Tank Insulation like this is a good investment—on one installation the insulation paid for itself in 143 days.



Johns-Manville Tank Insulation on a standard tank carrying casinghead gasoline.

Johns-Manville Tank Insulation for casinghead gasoline tanks

21% a *month* on the investment—that is the actual saving shown by Johns-Manville Tank Insulation in a comparative test of bare and insulated casinghead gasoline storage tanks run in the Midcontinent field. Do you know of any better investment?

Johns-Manville Tank Insulation on casinghead gasoline tanks not only pays for itself in a few months but goes right on saving valuable gasoline for you for years at the same high rate. Its cost is low, its efficiency is high, and it lasts indefinitely. You can get full particulars in short order by writing or wiring any Johns-Manville office.

Cover oil tanks carrying crude or motor gas with Johns-Manville Vapor-tight Insulated Tank Tops.

JOHNS-MANVILLE Inc., 292 Madison Avenue at 41st Street, N. Y. C.
Branches in 62 Large Cities
For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto

Through Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PREVENTION PRODUCTS

JOHNS-MANVILLE Tank Insulation

CHESTNUT AND SMITH —

The Paint they Use

Scene at the great natural gasoline plant of Chestnut and Smith, Breckenridge, Texas.

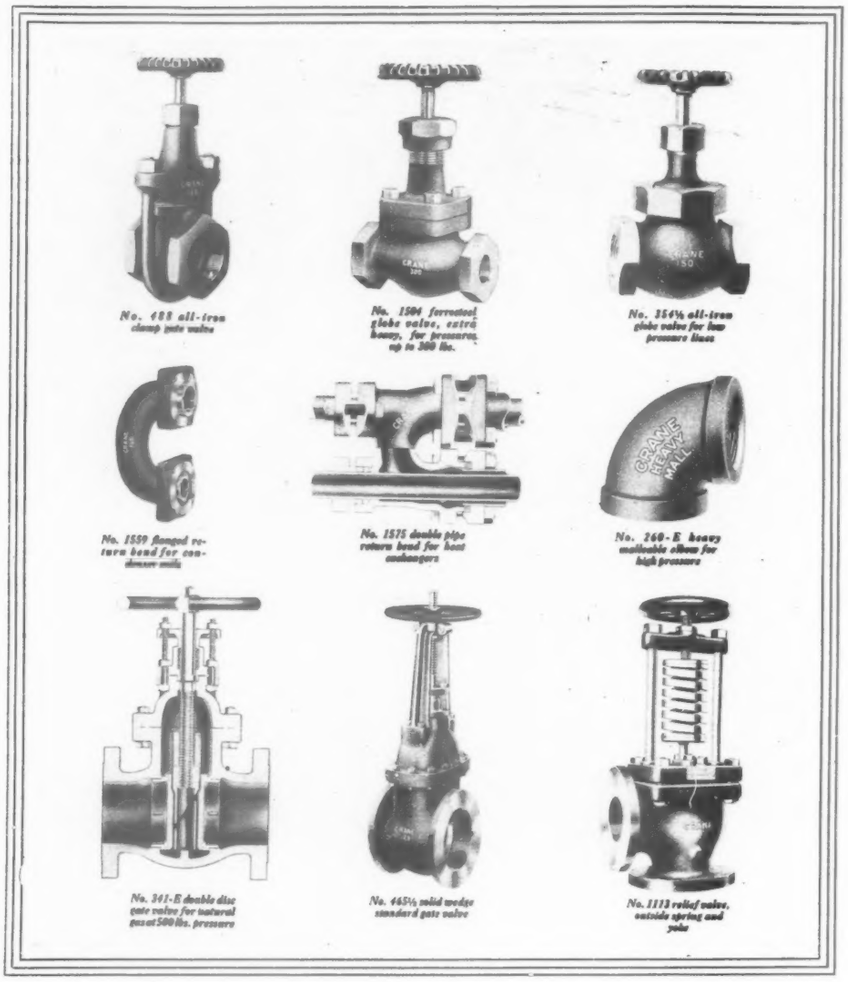
THE whole vast Breckenridge plant of Chestnut and Smith is protected almost exclusively by Sherwin-Williams products. As is generally known, we specialize on providing the exact type of paint, varnish and enamel correct for each surface. Every finish is made to give a definite service in a definite place—no guess work

Information, recommendations or prices on finishes for any purposes will be given promptly.

THE SHERWIN-WILLIAMS COMPANY, *601 Canal Road, Cleveland, Ohio*

SHERWIN-WILLIAMS

Largest Paint and Varnish Makers in the World


No. 488 all-iron clamp gate valve
No. 1504 ferrosteel globe valve, extra heavy, for pressures up to 300 lbs.
No. 1541½ all-iron globe valve for low pressure lines
No. 1559 flanged return bend for condenser coils
No. 1575 double pipe return bend for heat exchangers
No. 260-E heavy malleable elbow for high pressure
No. 361-E double disc gate valve for natural gas at 500 lbs. pressure
No. 465½ solid wedge standard gate valve
No. 1113 relief valve, outside spring and yoke

FOR NATURAL-GAS GASOLINE PLANTS

Crane valves of ferrosteel and of cast iron with iron seats and discs satisfy the special requirements of natural-gas gasoline plants. There is a correct pattern for every pressure, a suitable type for every class of service. These tested valves, used with Crane fittings of proved strength, bring important economies in pipe-line upkeep, reduce fire hazard and often save costly operating delays.

CRANE

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CRANE-BENNETT, LTD., LONDON
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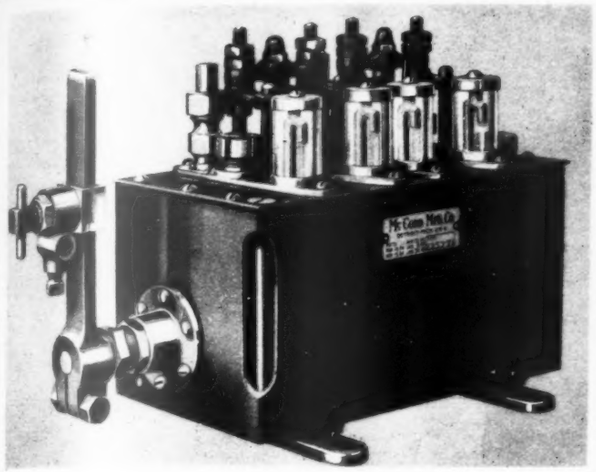

McCORD

CLASS "B"

Force Feed Lubricators

"The Standard of the Oil Industry"

are used in the plants of the Chestnut & Smith Corporation described in this issue.

They have proven their worth under the most severe conditions.

You can install a McCord Lubricator, fill it with oil and keep it filled and forget your lubricating problems.

Ask for Bulletin 47

Sold by

NATIONAL SUPPLY CO.

ALL BRANCHES

McCord RADIATOR & MFG. CO

Lubricator Division

DETROIT, MICH

Manufacturers of McCord Dependable Lubricators, McCord and McKim Gaskets, McCord Radiators

World's Largest Gasoline Plant Using our Gastite Cover

THE new Hanlon Gasoline Plant, at Breckenridge, Texas—the largest in the world and representing the last word in scientific and efficient equipment—is using McDONALD Universal Gastite Dome Covers to load gasoline.

The day is rapidly passing when any gasoline will be loaded except through gas-tight covers. The McDONALD cover is a product of the highest mechanical perfection and of utmost durability. Patents pending. Ask for fully descriptive literature.

"The Home of the Swing Joint"

A. Y. McDONALD MFG. CO.

Dubuque, Iowa

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Delivered to the Addressee

WHEN you send a letter by registered mail and want to make sure it reaches the right party you have it marked: "Deliver to Addressee Only."

That is what it means to an advertiser of oil industry supplies when he puts his message in The Oil and Gas Journal.

It goes direct to the active men in the industry, the executives, managers, superintendents, field men, the technical and sales staff of refinery and marketing companies, everyone in the oil business personally interested in the efficiency of equipment and the improvement of methods.

There is no waste effort, no handbill distribution. Every copy counts because the message is delivered to the addressee through the medium that reaches him infallibly and when his attention is focussed on the subject, when he is seeking information and his mind is receptive.

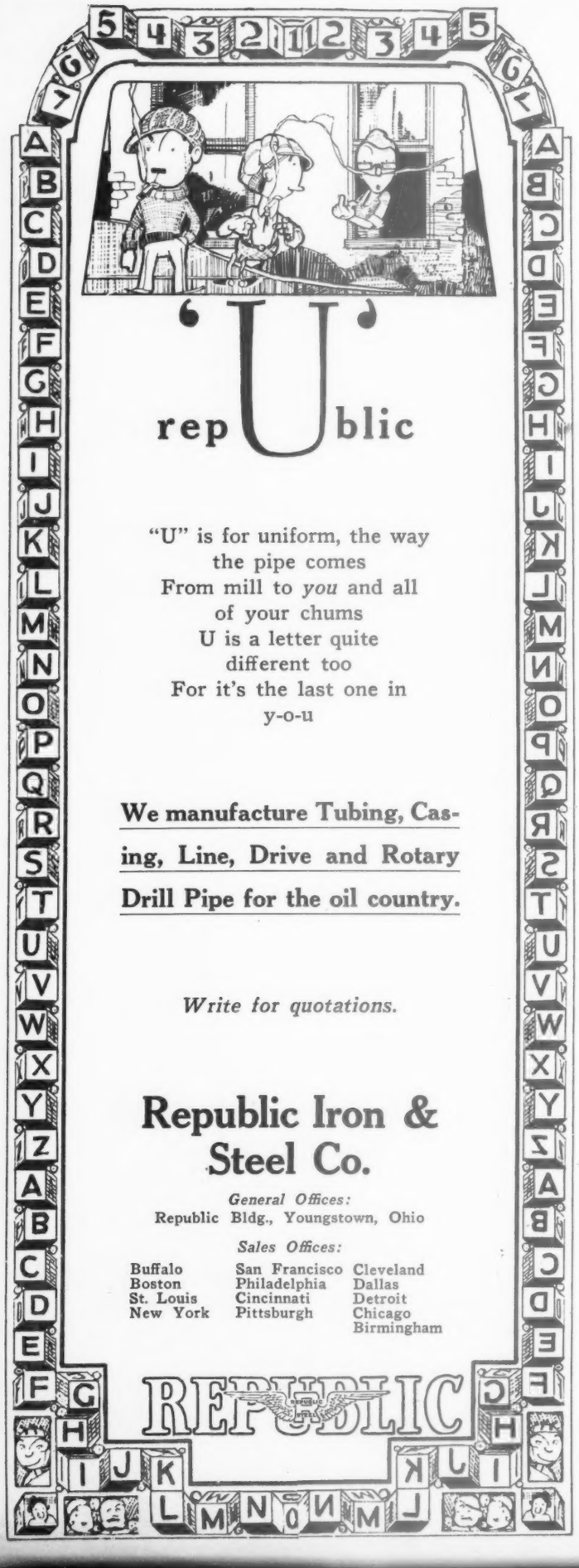
The continually expanding business represented in the advertising pages of The Oil and Gas Journal is proof that it is a paying investment.

The constantly increasing circulation of The Oil and Gas Journal, doubled within two years, shows the reader interest. The high quality of that circulation is attested by the fact that it is a Six Dollars a Year proposition. Men do not pay Six Dollars for a publication they do not need or do not read.

The fact that The Oil and Gas Journal subscription renewals have established a new record in American trade publications clinches the character and standing of "The Big Yellow Book" as the recognized Authority on Oil.

That dependability, which has earned The Oil and Gas Journal the reputation of being "The Oil Man's Bible," is an invaluable asset to those who use its pages. The Advertisers Index of The Journal is a roll-call of world leaders in the manufacture and distribution of oil industry equipment and supplies.

They are in The Oil and Gas Journal because its readers are the men they want to reach, because their messages are delivered to the addressee.


'U'
republic
"U" is for uniform, the way
the pipe comes
From mill to *you* and all
of your chums
U is a letter quite
different too
For it's the last one in
y-o-u
We manufacture Tubing, Casing, Line, Drive and Rotary Drill Pipe for the oil country.
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Republic Iron & Steel Co.
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REPUBLIC

A. L. BEATY ON THE PETROLEUM TRIANGLE

(Continued from Page 35)

of saying oil producers usually do not care to ship their oil but prefer to sell it. Once the oil is sold the transportation problem is one for the purchaser. It is the large refiners that become the purchasers and it is necessary for them to have the fullest freedom in moving the oil to their refineries, otherwise the handicap placed directly upon them reacts upon the small producer and affects the price which he receives. Pipe lines are 90 per cent mere plant facilities and 10 per cent for public service. The tail should not wag the dog. I think it is safe to say the divorcement idea was weighed in the balance and found wanting. The divorce was denied. It may not be res adjusticata, but it is a case that was lost and will be lost or should be lost every time it is presented. All parties at interest, the people, the Government and the industry, seem now to understand the situation, and that is enough.

Titles and Production

That branch of the business which pertains to the production of crude oil and which I come to last is the one of first importance, for were it not for production there would be nothing to consider. Under our system of land titles petroleum in the earth is the property of the land owner, whereas under some other systems it was reserved by the Government when the land was granted, and those who would develop oil must obtain Governmental concessions. These systems were molded either before petroleum was thought of or before it became a product of importance commercially. They were framed, so far as minerals were concerned, with particular reference to precious metals and solid minerals. Petroleum has been known for centuries but its value was not known until near the end of the nineteenth century, and indeed we might almost say until the twentieth, while gold and silver were conspicuous in the earliest traditions of mankind. The legal conception of land, whether founded in the civil or the common law, carried in many instances the idea of a reservation of minerals to the crown, and this passed from generation to generation, modified only as by revolution or evolution the systems underwent change.

It is an interesting study to observe the development of mining law and of property rights in the subsoil as the American colonies came into the Union and as additions were made to the original thirteen colonies. Even today we find some lack of uniformity. In a few cases the Federal Government has mineral rights. In others they are property of the State. But the general rule is that he who owns the land has title extending to the center of the earth; and this takes in petroleum deposits. It is our system. It is our land law. Under it we have lived and prospered. We still live and prosper.

Government Ownership

At times when production has exceeded consumption and the profits in the business for the moment were small, some of our friends and fellows, groaning under the burden of riches that could not be cashed, have been disposed to criticise the system and feel if we were only operating under Governmental concessions we might fare better. Their thought was that a wise Government would not countenance an economic waste of this valuable product. Again, they felt that under a system of Governmental concessions oil pools would not be split into fractions and turned over to dozens or hundreds of different operators, each vying with the others as to how much could be taken from the earth within the shortest limit of time, but orderly and economical development would obtain. Against the force of this logic we must place the everlasting fact that the industry would not have developed as it has developed under that kind of system. I believe the fact of individual ownership, the fact that the proprietor of each tract of land is the owner of any petroleum underneath the surface, with freedom to lease or develop it at his will, has been the chief contributing factor in the building up of this great industry. It is truly an American industry, for no matter where on the globe oil is produced Americans are there. Our leadership is recognized and our practices are followed. My conviction is that if our Government had owned the oil the restrictions upon development and the lack of incentive would have been such that we would not know today the value or uses of petroleum or how or where to find it.

Nationalization Not Needed

I wonder if any one would favor recapture, or the nationalization of oil in this country. In the first place, there could be no such thing as confiscation. Nationalization would mean a taking by the Government, which in turn would be required by our constitution to make just compensation in money. This is assuming a national necessity which would justify the taking. If the taking should occur on the ground of national defense it would imply the thing taken was necessary for the national defense. As a practical matter just compensation would mean an amount corresponding to a clean sweep of the industry. It would mean even more than the invested capital we talk about and place at $8,000,000,000 or $9,000,000,000.

Shall we have Governmental regulation? The anwser is, We do not need it. I am speaking in the broad sense, and am thinking of price fixing and things of that kind. There are a few places at which uniform regulation, worked out by those who are familiar with the subjects, would be salutary. One is where the producer in his greed commits waste at the wells or in storage. We need rules of conduct and an umpire at these points. There is nothing radical or alarming in the idea. Some oil producing States have taken notice of wasteful practices and have acted to prevent them. The enactments passed in many cases have been crude and sometimes unworkable. This has been due to the fact that those skilled in the business did not take the lead or point the way. Town-lot drilling and line crowding are things to fret about, and doubtless something on that score might be done. It is an outrageous species of competition, worse in principle than selling below cost, when one is forced to drill a well to each acre in order to get its proportion of oil in the pool when a well to 10 acres would suffice. Among serious operators there is not much difficulty on either of these accounts, because they usually rise to the occasion and do what is right; it is the reckless operator, usually a stock selling promoter, that needs curbing.

Doherty Pooling Proposal

Mr. Henry L. Doherty recently delivered at Cleveland a very interesting address in which he advocated the inauguration of a new syystem whereby in the future oil pools would be developed and operated as units. He advocated the enactment of State legislation to the effect, stated in his own words, as follows:

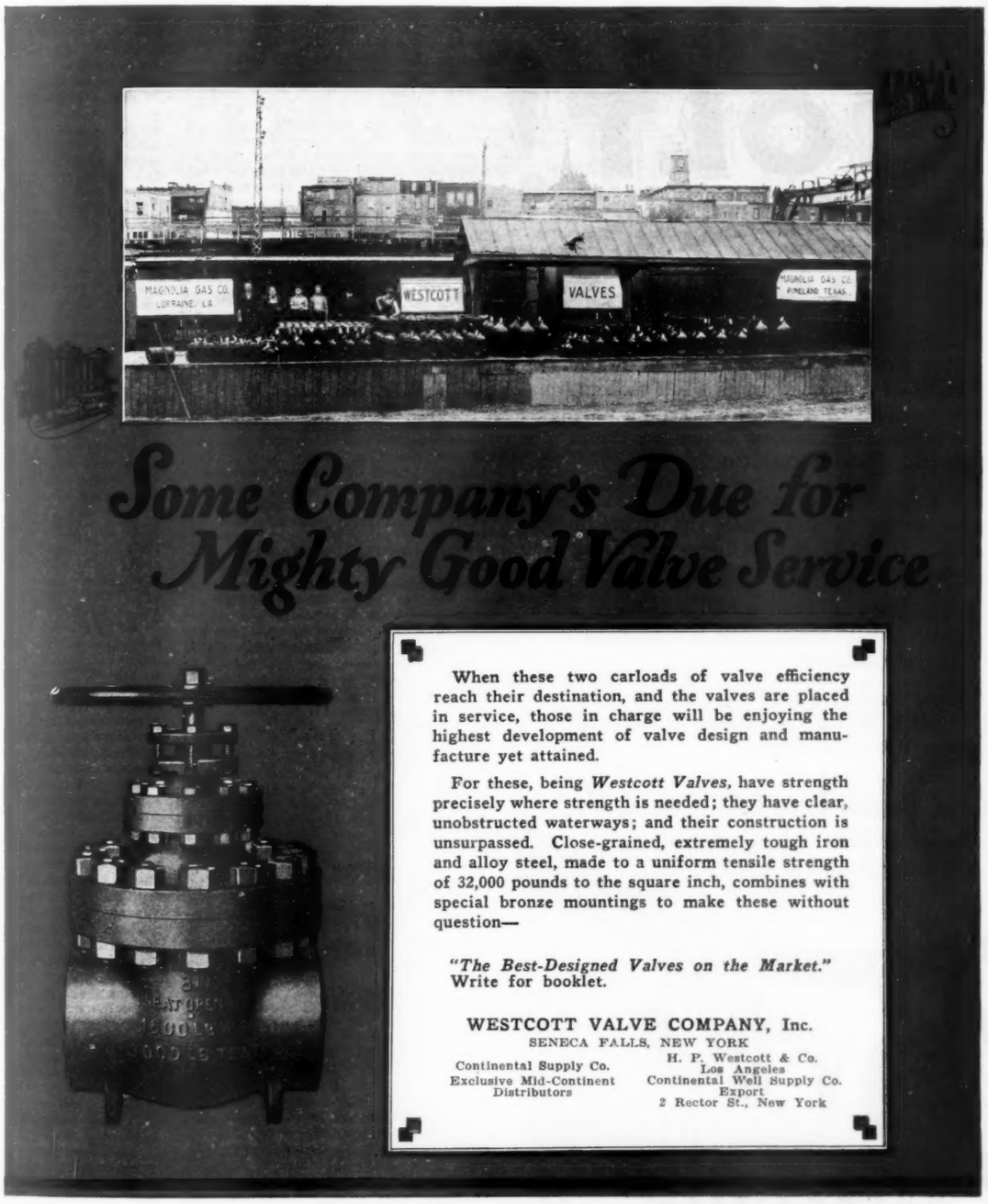
First—No one should be allowed to drill for oil without first receiving a State permit to do so.

Second—Nobody would be given a permit to drill for oil until an exploration district had been established.

Third—Exploration for oil should be restricted to that part of the exploration district one-half mile inward from the outer boundaries.

Fourth—The strip of one-half mile within the outer boundaries of the district should not be drilled for a period of one year after oil or gas had been found in commercial quantities or sooner but not or until the exploration district had been enlarged or another district had been established adjacent to it and that the contractors on the two districts—if seperate districts are formed—should not attempt to drill either half mile strip until they had agreed on a plan on which it should be drilled, and failing to agree upon a plan, then the State Engineer could specify the plan suggested by either contractor or a plan of his own.

Fifth—Royalties should be paid to the trustees of the district and they would settle with the individual land [illegible]



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For these, being *Westcott Valves*, have strength precisely where strength is needed; they have clear, unobstructed waterways; and their construction is unsurpassed. Close-grained, extremely tough iron and alloy steel, made to a uniform tensile strength of 32,000 pounds to the square inch, combines with special bronze mountings to make these without question—

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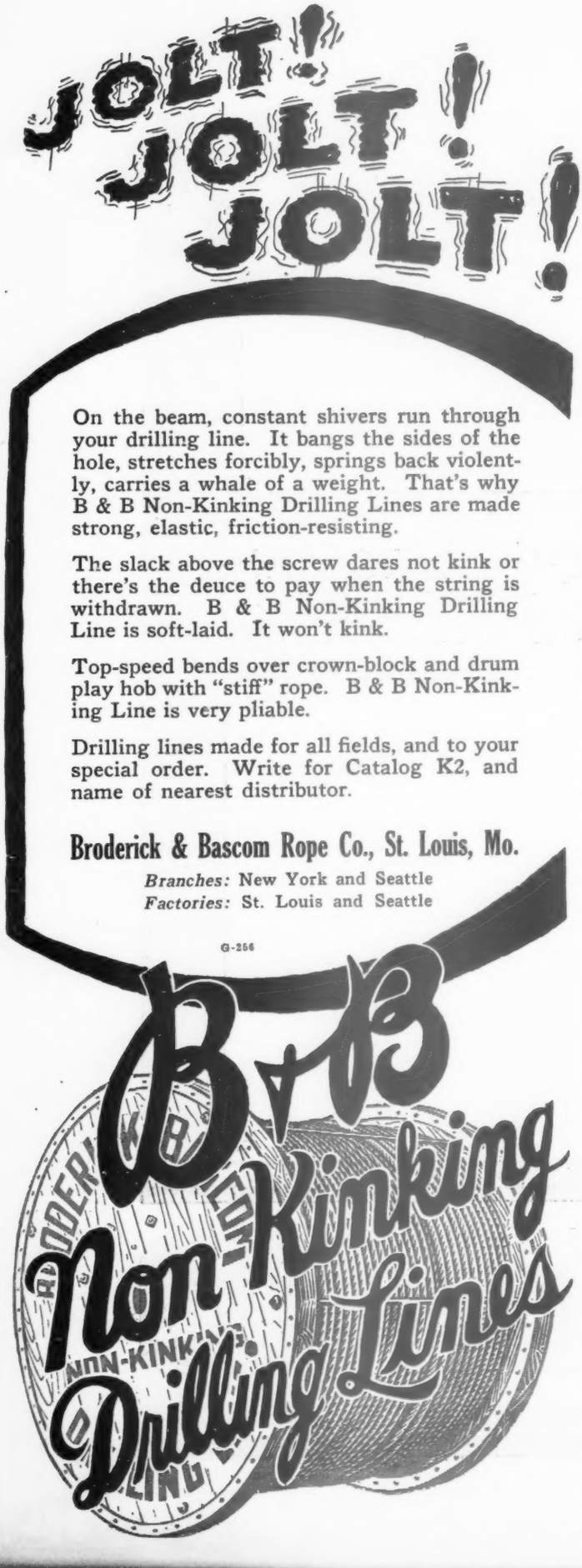
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JOLT!
JOLT!
JOLT!
On the beam, constant shivers run through your drilling line. It bangs the sides of the hole, stretches forcibly, springs back violently, carries a whale of a weight. That's why B & B Non-Kinking Drilling Lines are made strong, elastic, friction-resisting.
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according to the calculated amount of oil or gas underlying each man's land.

Plan Duly Considered

This same plan was submitted by its author, as he says, to a committee of the Institute more than a year ago. I served as chairman of that committee, and with me were a number of leading men in the industry, including Mr. Doherty. I do not know what happened before the committee was appointed but I do know that we considered the plan and found ourselves unable to concur in it. My recollection is there was not a single convert. I cannot agree with Mr. Doherty's view that it was not sufficiently studied or understood. He is always forceful, besides being an excellent fellow, and he held none of his logic in reserve when presenting this plan. I have said this much in view of observations made by Mr. Doherty in his speech indicating his plan had not been duly considered. And now I propose to discuss the plan, speaking for no one but myself, and tell you why I am against it.

Mr. Doherty has ignored details. It would be easier to discuss the plan if he had been more specific. He does not say how far he would have his proposal apply to pools already in production, or how existing leases would be treated. The cardinal feature is a requirement for the organization of development districts in analogy to drainage or irrigation districts. It involves, of course, the idea of compulsion as against land owners who may object. Of necessity there would be a governing body, through which the districts would function in making leases, apportioning royalties, and otherwise carrying on.

The owner of a tract of land owns the oil in the rocks and sand beneath the surface within his boundaries. He has the right to drill wells, extract the oil, and appropriate it. In the absence of statute to the contrary, he may take not only the oil that normally rests within his own boundaries, but his wells will start a movement of oil in their direction, and he is free when it reaches his land to take oil which was his neighbor's. He is in position to say, if we may change Shakespeare's words, "'Twas his, 'tis mine, and will be slave to thousands." This is the law, as it generally applies in our country at the present time. It is seen that when a land owner or his lessee drains adjoining land, he gets something to which he is not morally entitled. He may be legally entitled, to it, but this legal right is not inherent or fundamental.

Owners Have Remedy

The taking is not so much a right as the adjoining owner's loss is damnum absque injuria. The courts from the beginning have merely balked on the remedy in such cases, seeing that the adjoining owner was at liberty to protect himself by drilling on his own land. If, therefore, the legislature should say that future pools shall be operated as units for the common benefit of all owners, in proportion as their lands contribute oil values, it might be conducive to justice rather than injustice, provided the scheme were workable in all respects.

It has been my opinion for a long time that a valid statute might be enacted defining the minimum drilling site as, say, 10 acres, with discretion lodged in some supervising authority to vary this in accordance with formations and other physical conditions in different pools, prohibiting the drilling of wells within a specified distance of boundary lines, so that wells could not be drilled on fractional sites or town lots until they should be consolidated into full drilling sites, with some provision whereby the owners of such fractions might receive drainage money in lieu of their right to drill. But even that would involve many details and possible complications, and perhaps it is "better to endure the ills we have than flee to those we know not of." Such a law would be based largely upon the idea of justice between land owners and not solely upon the prevention of waste. No one owning a plot of ground just large enough for the four corners of a derrick should have the right to sink a well which in the very nature of things unduly drains the surrounding land or else forces unreasonable expenditure in offsets. That element does not exist in the Doherty plan, because in ordinary development the adjoining land owner has fair means of self protection in his hands.

Insuperable Difficulties

I think there are insuperable difficulties standing in the way of the Doherty plan. The first are those of a legal nature, and they appear at the very threshold. So far as established pools are concerned there can be no argument; the proposed enactment would impair the obligation of contracts, would take property without due process of law, and would be unconstitutional. Almost the same can be said in regard to territory merely under lease—and where could one find any territory at this time where the lease hound has not been?

But let us assume there is virgin acreage somewhere and proceed with the study. Is there a precedent? Have we a chart or a compass? The analogy to drainage and irrigation districts is imperfect. The only point of similarity is the local option, the voting or what not, the district organization. Drainage and irrigation districts involve, as against nonconsenting land owners, the imposition of assessments which result in somewhat uniform benefits. They do not interfere with the owner's use of his property, but on the contrary facilitate him in that use, whereas the creation of the oil district would mean an involuntary pooling of estates, and at least an interference with established right and method of use now vested in the individual land owner.

A Voyage in the Dark

As strange as it may seem to oil men, there are citizens who would prefer orange groves to derrick sites, especially if the latter meant small wells or doubtful profit. But the vested right that I meant to refer to is the right of the owner to develop his own land or have it developed in his own way for oil, the adjoining owner being in fair postiion to protect himself against drainage. It is no answer to say the owner would profit in the long run. On that theory a paternalistic Government might order its farmers in a period of overproduction to desist from planting specified crops and console them by the statement they would profit ultimately. That sort of thing is contrary to the spirit of our institutions; it is vicious in principle. We do not need a precedent for something that is good, and we need no chart or compass when beckoned to green shores in sight, but deliver us from making bad precedents and from stormy voyages in the dark.

I have mentioned the impossibility of including pools already developed, and the nearly if not quite similar status of territory merely under lease, which, assuming the plan could be made applicable to untouched areas, brings me to the crowning anomaly of the thing; we would have the old system in this part of a township, the new system in that part of it, and a zig-zag zone of the twilight type between.

But I shall go a little further and discuss some of the practical details of the plan as I understand it, assuming still there is territory to which it could be applied without violating the constitution. I want to come right down to cases and show how impractical it is. Let us consider the procedure step by step after the law is passed. The first step is the creation of the district. Who will put the ball in motion? We assume the law is faultless and provides all the machinery. Someone must take the initiative. Will it be a land owner, an oil man, or a promoter? His mission would be to start the steam roller over what has been regarded as private rights.

Assuming It Tried

We cannot assume everybody would agree, for if it is a mere matter of agreement there is nothing new. An area is to be selected, the first well is to be located, the district boundaries are to be fixed. Can we assume a wise and fair minded expert would arrive at the psychological moment? The odds favor the negative. Perhaps a sufficient number of experts could be found in the oil industry, but they would not be disinter-

(Continued on Page 102)

Place of Furnace Oil in the Industry

Burner Manufacturers and Petroleum Industry Urged to Foresee and Direct Development of Home Heating Program. Estimating Growth

By Orel P. Keeney

President National Petroleum Association and Manager Bulk Sales Department, Tide Water Oil Co.

Before Group 2, Heating Homes With Oil, American Petroleum Institute, Fort Worth, Tex., December 9

The place of furnace oil in the petroleum industry at the present time is impossible of scientific and accurate designation. There is a real need for the petroleum industry to try and determine what the place of furnace oil should be, and to help put it there! In deference to the opinion of some, perhaps I should add, or help put furnace oil out of the industry because all of our oil resources will be exhausted within a few years, or there won't be enough to go around.

Furnace oil at present is a growing factor and cannot be dismissed as some tried to dismiss it a few years ago with the bland remark—"There ain't no such animal and there ain't going to be any."

No important utilization factor of petroleum sprang full-fledged into prominence without an experimental period of development. Many occupied too long and unsatisfactory a period, judged by up-to-date research and technique developing standards. Without magnifying the possibilities of domestic heating with oil, there is perhaps here a new utilization factor of tremendous importance. If this infant has even a chance to grow to an effective maturity, let us not lose valuable time and future desirable results by an attitude of hands in the pockets, standing by to see what happens.

Development to Date

The use of fuel oil for domestic heating dates back comparatively few years. It was not until 1887 that a few of the Western railroads began to burn oil. There was a progressive development along scientific lines in oil burning. Shortly thereafter the smaller types of burners for domestic heating appeared in certain territories. The design sprang from the minds of individuals who had the vision of the possibilities of using oil for household heating. The last three years have seen a vast amount of experimental work to develop a satisfactory domestic oil burner.

In 1922 136 patents of various types of oil burners were granted by the Patent Office. In 1923 there were 227 patents issued. In the 18 years previous, a total of 1,867 patents for oil burners were granted.

To date more than 5,000 patents of combustion devices and furnaces have been issued, which does not exclude patents expired, but in use. Of the total number of household burners being exploited, approximately 300, there are only 12 which have been approved by the National Board of Fire Underwriters. They are continually examining new devices submitted by the manufacturers, and this list of 12 will undoubtedly be increased in the near future.

Types of Burners

Oil burners have been developed to function in accordance with the various climatic conditions throughout our country. The public, where there is a season of cold weather, has been educated by burner manufacturers to use burners fully automatic in operation. In the milder climates semi and nonautomatic systems have been used. The domestic oil burners are of three types: (1) The natural draft burner; (2) The forced draft burner; (3) the rotary type burner. The natural draft type of burners at present require a high grade of kerosene distillate or unfinished kerosene, while the forced draft and rotary types can use kerosene distillate, and in some cases the higher grades of fuel and gas oil.

Certainly at present, furnace oil, including all liquid petroleum used for house heating, is a real factor in the petroleum industry. It seems possible the oil burner will replace the coal furnace more rapidly than coal replaced wood, or the wood stove supplanted the open fireplace. Leaving out the factor of economy, or even accepting the factor of additional expense, the use of furnace oil provides increased heating effectiveness, a higher degree of cleanliness, a greater convenience and comfort and avoidance of drudgery. These are all things the American people desire and are to a greatly increasing extent securing in many ways.

A very careful estimate shows that by January 1, 1925, there will be actually in operation 248,000 household oil burners. The annual consumption of these burners is estimated at from 600,000,000 to 800,000,000 gallons of furnace oil. Taking the lowest figure, this year furnace oil may be considered to replace 4,000,000 tons of coal.

I have been informed a questionnaire was sent out to burner manufacturers requesting information as to their output of burners, number in actual service, grade of furnace oil required and similar pertinent facts. Either from failure to consider the importance of cooperation or because of the rush of orders for oil burners, only five replies were received from the 500 letters sent out. The oil industry is not collecting statistics to show either the actual or potential quantity of the various grade of furnace oil manufactured from its current crude runs or the quantity being delivered to homes.

Grades of Furnace Oil

At present it is impossible to ascertain definitely how many different grades are being furnished throughout the country. One oil company reports 15 grades being supplied for burners of various types. I believe, however, that all the various grades could be roughly classified into three divisions:

Class 1—Unfinished kerosene.

Class 2—A very light and high grade gas oil.

Class 3—Light fuel oil over 24 gravity.

The oil industry has stood by and watched the growth of oil burning in homes and has been called upon to furnish fuels suitable for any type of burner which any manufacturer saw fit to sell. In general, the natural draft types of burners have required the Class 1 furnace oil or practically unfinished kerosene, while the forced draft and rotary types can also use Class 2 gas oil or in some cases Class 3 light fuel oil, depending upon the degree of atomization. The burners approved by the Board of Fire Underwriters are divided between the three general types, as follows: Natural draft, 3; forced draft, 7; rotary, 2; but by far the larger proportion in actual use are of the natural draft type as the the natural draft type burner of the raporizing type is cheapest to manufacture and is generally sold at a lower price.

Orel P. Keeney

A careful investigation discloses that last year the probable percentages of the various classes of furnace oil consumed throughout the country were:

Class 1	75 per cent
Class 2	15 per cent
Class 3	10 per cent

This year the situation has changed to where the consumption of various furnace oils is probably:

Class 1	50 per cent
Class 2	30 per cent
Class 3	20 per cent

Far From Standardized

It is very apparent that furnace oil is far from being a standardized, uniform product. The unmistakable trend is toward the use of heavier products. Undoubtedly the descending scale of prices for heavier fuels is largely responsible. In the consideration of the really essential properties of furnace oil, let us examine 10 of the characteristics:

The gravity of the product is in itself of no paramount importance except as indicative of other properties of desirable or undesirable qualities. So long as furnace oil is sold by the gallon, the lower the A. P. I. gravity without accompanying undesirable qualities, the greater will be the B. T. U. content per gallon, generally speaking, by reason of the increased number of pounds per gallon. Theoretically, the lower the gravity, other conditions being suitable, the greater the efficiency. Also, under present general conditions, the lower the gravity the lower the price of the oil.

The flash and fire tests must conform to the minimum established by local fire regulations, a safe minimum closed flash being 10 degree F.

It is dangerous to place too much reliance on any one or two particular tests in preparing specifications, as evidenced by the experience of one distributor who placed too much confidence in the setting of a maximum flash test as indicative of the desirable qualities of a furnace oil for use in a particular burner. The refiner met his specifications for flash test, but in so doing must have used a product of a very high initial boiling point to which he added a small proportion of a relatively light fraction. This particular oil met the flash specification, but the pilot of the oil burner only made the oil flash without any continued fire resulting. When the situation was explained to the refiner, he furnished a satisfactory product, but was governed not only by the flash but also by the fire test and the distillation range of the product he supplied.

The boiling point range at the present time is of more importance than it should be for the good of either the oil industry or the burner manufacturer. Particularly is this true of furnace oil for use in most of the burners of the vaporizing type and is also to be considered in connection with the effectiveness of the pilot in any automatic system. The exact limits of a satisfactory boiling point range depends upon the burner. For some atomizing burners a 24 gravity product of relatively high boiling points has been used satisfactorily. But some vaporizing types of burners are using a product of 340-360 degrees F., initial 15-18 per cent off at 392 degrees F. and 520-550 degrees final. To summarize, the boiling point range of furnace oil is of real importance to the vaporizing type of burner and in these cases it must be suited to the particular burners, the limits being determined by actual experience.

Need Wide Specifications

The manufacturers of oil burners not capable of handling a furnace oil of wide range in specifications have in some cases got into trouble by sending their burners to various parts of the country and recommending a certain gravity of furnace oil just because that gravity of furnace oil supplied to them at their own factory was satisfactory for their burner.

(Continued on Page 104)

POSSIBLE GROWTH OF FURNACE OIL USE

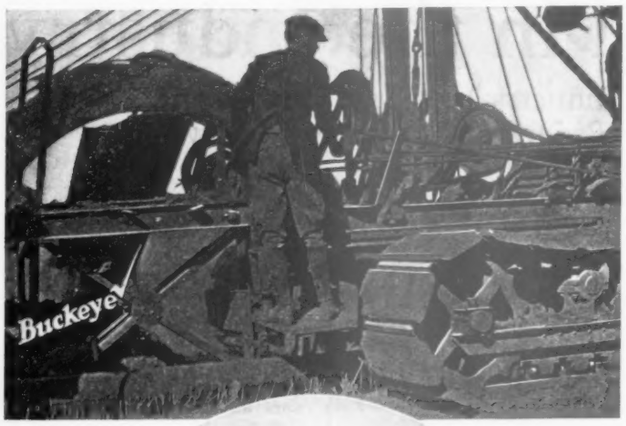
In concluding his address Mr. Kenney said:

The question of the possible growth of the oil burner industry is an interesting one to speculate about, particularly from the viewpoint of the availability of an ample supply of furnace oil. When there are not enough actual facts known to determine even present conditions accurately, I make no predictions nor claims for accuracy in the figures I will present.

Taking the number of dwellings in the United States as of 1920, probably over 1.2 per cent of all the homes have an oil burner. The consumption of furnace oil this year probably equals 4.5 per cent of all the gas and fuel oil produced this year; or 24.5 per cent of the present production of kerosene or 12 per cent of the gas oil alone.

If the present consumption of furnace oil is doubled the consumption would probably equal 9 per cent of all the gas oil and fuel oil or 49 per cent of the kerosene, or 24 per cent of the gas oil alone. If the present consumption is quadrupled it would probably equal 18 per cent of all gas and fuel oil, or 98 per cent of the entire production of kerosene this year, or 48 per cent of the gas oil alone.

It seems possible the field for domestic burners would be 2,500,000 homes. This would be 12 per cent of the total dwellings in 1920, 31 per cent of the homes wired for electricity, 37 per cent of the number of passenger cars other than Fords registered last year and 65 per cent of those reporting taxable incomes in 1921 of $2,000 or over. The consumption of furnace oil under these conditions might be 10 times as large as at present. This consumption would probably equal 245 per cent of the present production of kerosene or 120 per cent of the gas oil alone or 45 per cent of the total production of fuel oil and gas oil. Of course the entire production of gas oil and fuel oil is not available for furnace oil because of the limitations of viscosity and cold test.



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A. L. BEATY ON THE PETROLEUM TRIANGLE

(Continued from Page 100)

ested. An attractive prospect, and it might resolve itself into a race. I suppose that among the thousand and one details of the legislation there would be some provisions for contests between different individuals and groups who might be trying to esablish districts. The oil companies seriously engaged in the business would certainly have a new line of activity. The breeding of race horses would be stimulated.

Then think of the election of trustees to manage the district. Land owners and not oil experts would attend to this, and we could expect some primary-election politics. Instead of competition in negotiating with individual owners for leases we would have that other kind of competition wherein one of the participants is a trustee and does not represent himself. Those who believe in honest graft could ply their trade. The idea doubtless is that a single company would operate an entire pool. Otherwise, and if pools are divided up into separate parts under several leases, the michief sought to be remedied would continue. The only way to prevent its continuance under plural leases would be for the trustees to pass upon the drilling of every well and hold the scales level between the different lessees. This would require technical knowledge which the trustees could not be expected to possess.

Difficulties of Royalties

I shall not discuss the probable effect upon the small operator, who is entitled to his place in the industry, a place he has earned, and I shall not dwell upon the dilemma of companies having large investments in plant which they are entitled to protect through a free hand in obtaining the raw material at locations where it can be used economically, or the effect upon them of a system which would place it in the power of others to put them out of business, for too much analysis would weary you unduly, and moreover your minds have doubtless traveled over the ground. But I cannot refrain from pointing out one further objection. This objection would appeal most strongly to land owners.

I refer to the apportionment of royalties, which I may say incidentally would be a judicial function. The plan contemplates the inclusion of large areas in districts, much more than the actual oil bearing areas. Some of it may be rich, some may be poor, and some will be worthless. There are numerous landowners. No equitable apportionment of royalties could be made until the pool was exhausted, and no fair approximation would be possible until it was near that stage. And what applies to royalties would apply to bonuses and rentals, if one can think of them in connection with this plan. Orators are wont to speak of generations yet unborn and of children's children. They mean those who would receive these payments.

I admit the plan rather appeals to me as something to dream on, but it is another thing to revolutionize a great industry. The petroleum industry of this country has developed under our present system. All other branches and divisions are built around the producing business. The producing business as it stands today and as it promises to progress in the future to meet the requirements of our country has its mud sills in the present system. In place and time and appointment it conforms to this system. The other branches of the industry are coordinated with it, and to shake or shift it would disastrously disturb them. It is too late to talk about changing. One might as well figure on diverting the Colorado River where it runs through the Grand Canyon of Arizona.

Outlook Encouraging

I shall says no more about the Doherty plan, preferring to follow the thought which comes to the mind in connection with the present state of the industry. It is not easy to grasp the meaning of $8,000,000,000 or $9,000,000,000. But that is the present investment in the petroleum business in the United States. Our production of crude is over 700,000,000 bbls. a year. Think of it! And that is not all; consumption is keeping pace. To be sure we have recently had periods of overproduction. What of it? Have the sound companies and wise operators failed to make profits? Balance sheets speak for themselves. They may not be excellent but they are not bad. Let us not weep and wail—yet. Go find a cattleman and ask him, How is business? But keep an eye on his hip-pocket.

If we are alarmed by the fact that our 1924 production of gasoline, amounting to approximately 9,000,000,000 gallons, would fill a reservoir 20 feet deep covering nearly 1,400 acres, or a string of tank cars 10,000 miles long, we have but to reflect that, saying nothing of other consumption, if the 17,000,000 automobiles and motor trucks in the United States were placed in line, each occupying 20 running feet, there would be a procession nearly 65,000 miles long, sufficient to reach twice around the world, with enough cars left over to connect Forth Worth and San Francisco, San Francisco and New York and then back to Fort Worth, with branch lines to every other important city in the United States. And "the cry is still they come."

Fluctuations Elsewhere

We usually think of petroleum production as something which fluctuates most violently, but the fact is, as compared with consumption, it fluctuates no more than do many other staple products. A table of the world's production and consumption from 1859 to the present time would show that in no period has the production been out of line with consumption in any extraordinary percentage.

Compare petroleum with cotton, which depends not at all upon the discovery of new zones: Within the last five years we have seen a difference of more than 25 per cent between the world's production and consumption in a single year. In 1920, for instance, the production, including linters, was 19,665,000 bales, and in 1921 it dropped to 14,741,000 bales. In the United States alone the drop was from 13,440,000 to 8,340,000 bales. This was true despite the fact there was no material change in consumption, which was upwards of 20,000,000 bales. On the other hand there have been years in which the world's production of cotton was two or three million bales above consumption.

Similar illustrations could be made of corn, sugar and other staple products, which depend upon cultivation of the soil and upon rain and sunshine. When, even for a brief spell, petroleum production is running 10 or 15 per cent above consumption, we become alarmed and fearful the worst may happen. If it should run 25 per cent below consumption, and stocks were out of the way, I suppose we should have pandemonium.

Industry in Healthy Condition

I would not if I could create undue optimism. Certainly I should dislike to see too much drilling activity until stocks are reduced and we are running on an even keel. On the other hand, I think there is no room for gloom and despair. The industry is in a healthy conditions. Sick spells may be expected from time to time, but fortunately they do not last long.

The problem of overproduction is not the most serious that can confront us. A more serious one is underproduction, and we are certain to face it some day. Overproduction is checked automatically. When it occurs the increased competition among those who must sell and the decreased competition among those who purchase cause reduction of prices, and when prices reach a point where it is not profitable to produce, production slows down. Another and decisive check occurs when those who purchase, refine and market become fully stocked and either apportion or decline to make further purchases. The oil is then kept in the ground. On the other side of the picture, though scarcity of product and resulting high prices will induce more drilling and up to the present time has increased production, there is a limit to this just as certainly as our gold production reached its peak in 1852.

My point is that when the world's production in comparison with the

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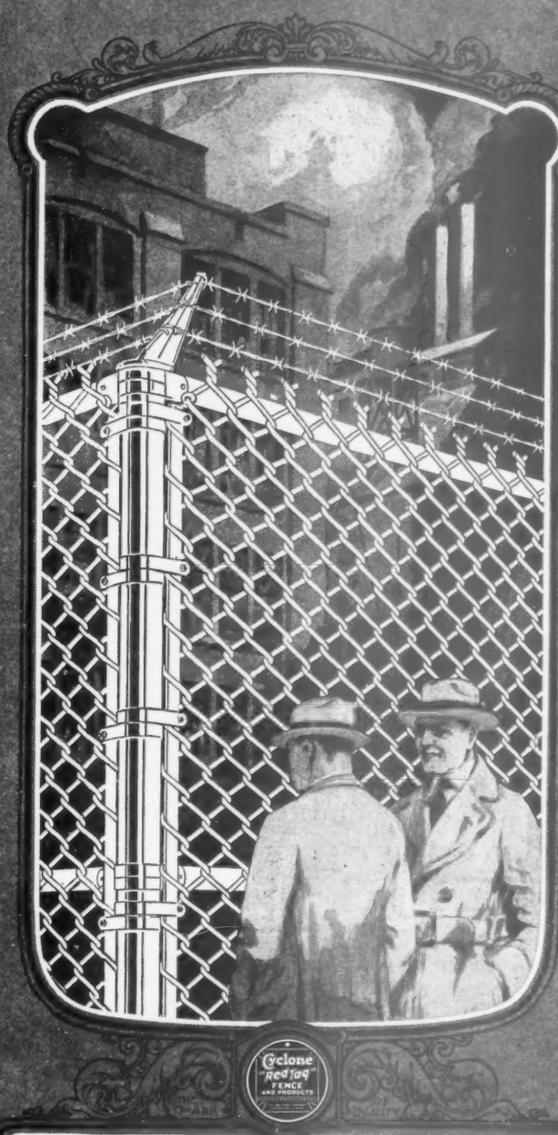

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PROPERTY PROTECTION PAYS

consumption reaches the point where, in the nature of things, there must be a pause, we shall have to take new bearings. Of course, a shortage of product will reduce consumption. The products will not be used for all the purposes for which they were formerly used. Consumers of fuel oil will go to coal, and flivvers will be kept in the garage or wood shed. That will be the signal for the industry to cease expanding. When it goes on the wane it will not afford the opportunities that it has afforded in the days of forward movement. It will be akin to liquidation. Yet, even that need not be ruinous. The process will be slow and gradual, with comparative high points here and there. Fields will be depleted only as facilities wear out, and it will be ideal if the petroleum age can close with people, government and industry in understanding and accord.

PLACE OF FURNACE OIL IN THE INDUSTRY

(Continued from Page 101)

Color unfortunately has been emphasized in some localities. Or course the color of furnace oil in itself is of no importance, and it would be an economic waste if the furnishing of any particular color should increase the cost or limit the range of available products.

I do not know of any otherwise suitable product commercially made today which must be eliminated from consideration by reason of its sulphur content.

Some objections have been raised with the odor of certain furnace oils. In any properly designed and installed system any natural inherent odor of an otherwise suitable furnace oil is not a legitimate objection.

The viscosity must be such as to permit furnace oil being readily handled through comparatively small lines at a temperature which sets a very definite limit and rules out all heavy fuel oils.

The question of cold test is also of importance and to some extent a limiting factor. It is not practicable in household heating to provide for heating the oil, and this condition arbitrarily rules out those products of such cold test and viscosity which require heating. This is a limitation which the burner manufacturer cannot be expected to overcome. Finally furnace oil must not contain sufficient moisture or sediment to interfere with the operation of the burner. No unreasonable limits on this points are required by the average burner.

Asks New Classification

Statistics are not being gathered from the oil industry in a way to provide definite information as to the supply of products of suitable characteristics. Without too much trouble a division could be made in the present classification which includes all grades of gas and fuel oil.

The wider the range of product which the burner manufacturers design their burners to handle satisfactorily, the better for all concerned, the household user, the burner manufacturer and the refiner.

The effect of a wise price policy on the place of furnace oil both in the industry and in the minds of the public deserves serious consideration. Rapid price fluctuations are particularly noticeable and disagreeable to the public. It behooves every one interested in the development of furnace oil to safeguard legitimately the necessity of violent price fluctuations. One of the ways burner manufacturers can help is to make their furnace oil burners capable of handling a comparatively wide range of products.

No Low Price Incentive

The salesmen of the burner manufacturer will earn the regard of the petroleum industry if he does not stress the low price of furnace oil. Not because we may feel all petroleum products are now being sold on too low a basis but it may very well be that the increased demand for furnace oil will create a situation where furnace oil will deserve to be a preferential use for certain grades of petroleum. In such a situation a higher price for furnace oil would inevitably follow. The petroleum industry would prefer to see the burners sold only with such sales arguments and to such users as would not render likely the dismantling of oil burners with the accompanying criticism of the petroleum industry, if a higher price for furnace oil is justifiable. Certainly if the manufacturers of gas burning household heaters have one-half of their entire markets in territories served by manufactured gas, they do not need to dwell much on the low price of furnace oil.

One oil burner manufacturer refuses to let his salesmen quote comparative fuel costs, even telling them to say oil will cost more than burning coal, but that all the other advantages justify installation of their oil burner.

In addition to the desirability of burners handling a comparatively wide range of products because of the steadying influence on the price of furnace oil, this flexibility would safeguard a sufficient supply of furnace oil. With the growing consumption of all petroleum products supply deserves consideration. Certainly the wider the range of product which can be satisfactorily used, the less immediate would be danger of insufficient supply.

If the use of furnace oil is to develop with great rapidity and if fundamental conditions warrant relatively high prices, one of the problems of burner manufacturers is to market the most efficient device possible. Some believe the burner manufacturers should not supply a burner for use in the existing coal furnace but rather an efficient oil burning furnace.

What Furnace Oil Should Be

What furnace oil should be is of great interest to the refiner and any single refiner's answer is necessarily influenced by what crude or crudes he is running and his refinery equipment as well as by what products his sales department markets to the best advantage both from the standpoint of adequate outlet and price. Both of these factors are not yet quite subject to the continuous, even, unfluctuating control of even the supersales organization. Despite these varying factors I assume furnace oil generally comes somewhere within the kerosene and gas oil cuts. There are some who are not willing to concede that even during the next few years the demands for kerosene and gas oil for their previous uses can be met and at the same time a greatly increased demand for furnace oil be met without the creating of ill will resulting from some of the users being forced to relinquish their use of petroleum for more or less extended periods because of its increase in price.

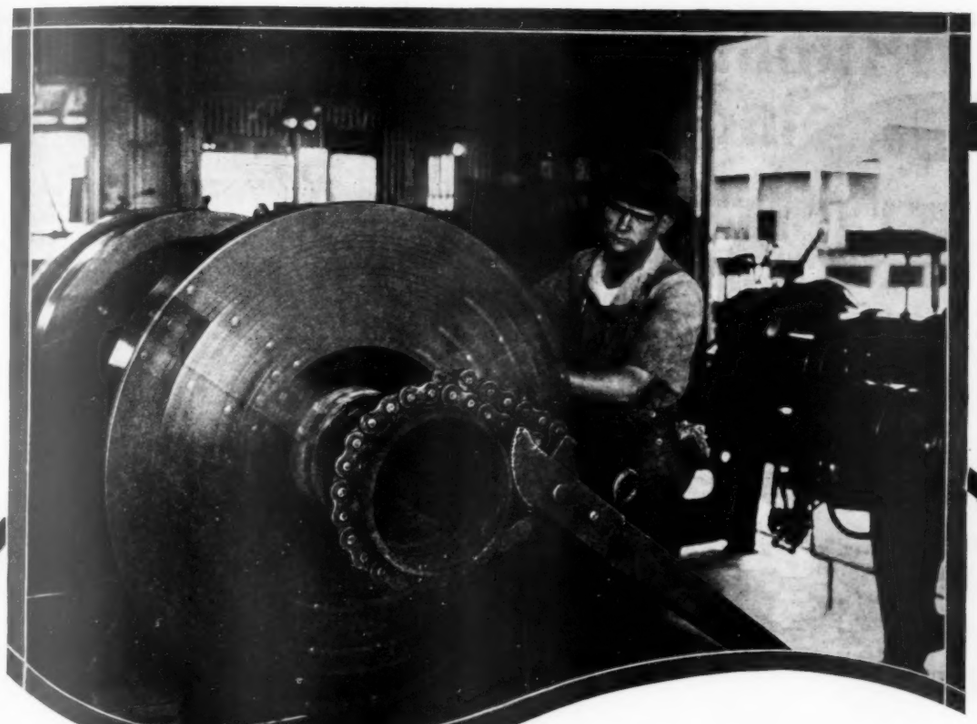
Probably most refiners feel furnace oil should come from those products which would otherwise be sold as gas oil or which would have to be considerably reprocessed for other products. This gas oil would include bottoms from rerunning crude naphtha bottoms, pressure distillate bottoms, kerosene distillate bottom, etc., or in other words, the light gas oils that contain fractions too high in boiling point for kerosene and that have too high a percentage off at the lower temperatures for a good cracking stock.

Limit to Supply

With a good market for gasoline and kerosene these would be the most desirable sources and could be sold at the lowest prices, but there is a decided limit to the quantity available. In a dull market for gasoline and kerosene the situation would be changed somewhat. Cracking stock would become less profitable and the margins between light gas oil, kerosene and gasoline would be narrowed. The less desirable cracking stock which as a rule have a lower flash and a larger percentage of light fractions than the better types would then be thrown into the light gas oil group. Kerosene distillates would not be stripped so closely of their gasoline content and in some cases would also be thrown into light gas oil. This would increase materially the source of furnace oil supply of practically any grade required.

Probably under normal ratios of value for gasoline, kerosene and light gas oil the refiner would like to ship light gas oil but under certain market conditions

(Continued on Page 130)



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they challenge the reserve power of your threading equipment

Rust-caked, corroded pipe—pipe that has survived a siege of active service under the ground!

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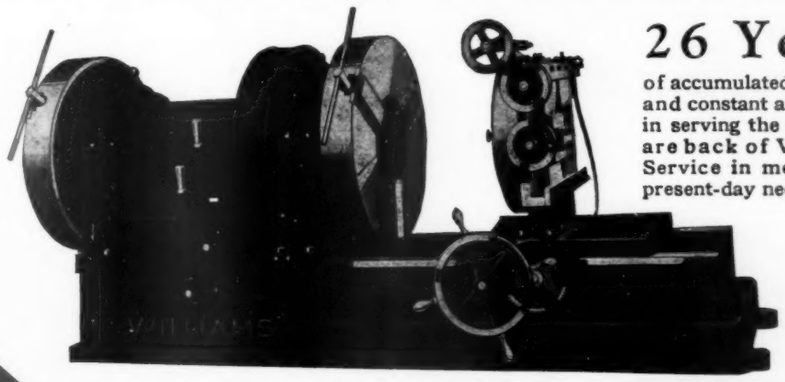
Williams' Pipe Threaders are built for heavy duty service—built to get the unqualified okey of the practical man on the job who expects his equipment to come through when stamina and reserve power are needed for the tough jobs of cutting and threading pulled pipe.

Convincing evidence that Williams' Pipe Threaders have served successfully and to the satisfaction of these practical maintenance men is found in the proven fact that Williams' Machines are today serving in shops with a record of 26 years of service to their credit.



WILLIAMS Pipe Threading Machine No. 16 B.—Capacity 6 inches to 16 inches

26 Years

of accumulated experience and constant advancement in serving the oil industry are back of Williams' Service in meeting your present-day needs.

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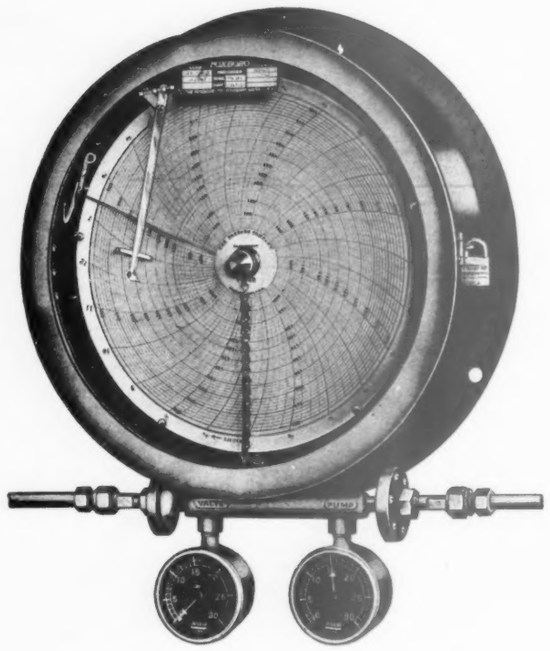

Are You Using The One Complete Method of Temperature Control?

The four methods of controlling still temperatures, ranging from least to most effective are:

1. **Hand control using indicating thermometer**
2. **Hand control using recording thermometer**
3. **Automatic control**
4. **The Foxboro Temperature Recorder-Controller**

As makers of temperature instruments for use with each of these methods, The Foxboro Co., Inc., is qualified to endorse the Recorder-Controller method. The Recorder-Controller provides positive automatic control. Experience has proved that automatic control plus a permanent temperature record are both essential for efficient still operation. The two are combined in the Foxboro Recorder-Controller. The operator simply sets the control lever at the desired point on the chart and temperature is maintained exactly at that point until the setting is changed. The record is an absolute check on controller operation and is invaluable for developing operating standards.

Install a Foxboro Temperature Recorder-Controller on one of your stills and convince yourself that it can increase output and reduce cost of operation.

Bulletin "O" 112-1 contains complete information .·. .·.

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THE COMPASS OF INDUSTRY
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NEW SIDELIGHTS ON THE BURBANK FIELD

(Continued from Page 21)

NW	16-26-6, December, 1920	16	5,400	768,894
NW	13-27-5, September, 1924	10	230,000	53,013
SW	16-26-6, June, 1923	16	360,000	513,940
NE	13-27-5, September, 1924	7	405,000	81,725
SE	16-26-6, June, 1923	11	127,000	222,827
NW	11-27-5, September, 1924	11	310,000	296,597
NE	22-27-5, June, 1923	16	1,025,000	1,929,912
NW	17-26-6, November, 1922	6	$235,000	76,592
SW	31-27-6, February, 1921	16	7,100	717,326
SE	31-27-6, February, 1921	16	3,000	812,319
NE	33-27-6, August, 1922	1	160,000	5,013
	Total	219	$4,029,100	10,321,492
	Comar Oil Co.:			
NE	2-26-5, November, 1922	7	$410,000	214,851
	Cosden Oil & Gas Co.:			
NE	6-26-6, November, 1921	16	$310,000	606,152
NW	8-26-6, December, 1921	16	115,000	642,139
SW	8-26-6, April, 1922	15	300,000	310,929
SW	14-27-5, May, 1924	16	1,790,000	150,364
NE	17-26-6, May, 1923	16	500,000	461,862
SE	14-27-5, May, 1924	16	1,955,000	359,297
SE	17-26-6, June, 1923	10	11,000	242,662
	Total	105	$4,981,000	2,672,435
	Devonian Oil Co.:			
SW	5-26-6, April, 1921	16	$700	868,640
	Gypsy Oil Co.:			
NW	5-26-6, May, 1921	16	$900	891,020
NW	7-26-6, August, 1922	7	175,000	342,013
SE	3-27-5, May, 1924	7	151,000	48,292
NW	24-27-5, March, 1923	16	1,310,000	2,807,599
SE	24-27-5, September, 1922	16	1,600,000	2,104,858
NW	19-27-6, March, 1923	16	1,100,000	1,216,082
SE	19-27-6, September, 1922	16	1,050,000	1,584,065
SW	28-27-6, June, 1922	9	280,000	340,996
NW	28-27-6, December, 1922	1	205,000	325
SE	28-27-6, August, 1922	1	61,000	6,833
NW	29-27-6, September, 1922	16	1,000,000	1,097,220
NE	31-27-6, January, 1921	16	1,150,000	1,486,315
NW	32-27-6, January, 1922	16	226,000	821,361
NE	10-27-5, June, 1923	16	33,000	814,996
SE	22-27-5, June, 1923	12	670,000	574,497
NE	23-27-5 June, 1923	16	1,195,000	1,384,532
	Total	197	$9,058,200	15,021,956
	Kewanee Oil & Gas Co.:			
NE	4-26-6, March, 1922	10	$205,000	364,212
SE	18-27-6, May, 1924	13	285,000	99,190
SE	7-26-6, November, 1922	2	275,000	15,296
	Total	25	$765,000	478,698
	Laurel Oil & Gas Co.:			
NW	1-26-5, May, 1921	16	$3,000	773,929
	Gardner Petroleum Co., and Carter Oil Co.:			
SE	1-26-5, January, 1921	15	$5,200	1,234,751
	Gardner Petroleum Co. and Marland Oil Co.:			
NE	12-25-6, September 1922	5	$325,000	132,216
	Lorraine Petroleum Co.:			
SE	6-26-6, February, 1922	15	$100,000	437,119
	Midland Oil Co.:			
SE	13-27-5, April 1924	16	$1,580,000	306,172
NW	15-26-6, May, 1922	5	61,000	149,686
NW	14-27-5, May, 1924	16	1,990,000	247,877
	Total	37	$3,631,000	702,735
	Phillips Petroleum Co. and Delmar Oil Co.:			
SE	10-27-5, June, 1923	16	$41,000	1,853,656
	Mid-Kansas Oil & Gas Co.:			
SE	35-27-5, October, 1922	13	$665,000	512,732
SE	33-27-6, April, 1922	3	115,000	90,567
SE	15-27-5, June, 1923	16	1,325,000	1,112,909
NW	26-27-5, June, 1924	7	670,000	105,343
	Total	39	$2,775,000	1,821,551
	Phillips Petroleum Co.:			
SW	11-27-5, May, 1924	16	$1,765,000	1,421,714
NE	35-27-5, October, 1922	16	495,000	373,281
NW	23-27-5, June, 1923	16	1,005,000	1,347,479
SE	11-27-5, September, 1924	16	505,000	290,115
SW	32-27-6, October, 1921	16	305,000	919,566
NE	14-27-5, September, 1924	14	225,000	62,256
NE	18-27-6, September, 1924	6	54,000	38,741
NW	20-27-6, June, 1924	6	75,000	32,277
SE	20-27-6, July, 1924	6	24,000	32,158
	Total	111	$4,453,000	4,517,189
	Phillips Petroleum & Skelly Oil Co.:			
NE	7-26-6, May, 1922	8	$155,000	218,717
SE	23-27-5, April, 1923	14	1,101,000	1,071,831
NE	24-27-5, March, 1923	16	1,245,000	1,702,080
SW	24-27-5, October, 1922	16	1,005,000	2,012,488
NE	25-27-5, June, 1922	15	1,335,000	706,907
NW	25-27-5, June, 1922	14	1,160,000	818,594
SW	25-27-5, February, 1922	9	6,100	671,309
SE	25-27-5, August, 1921	13	57,000	867,615
SE	26-27-5, November, 1922	12	805,000	381,782
NE	26-27-5, January, 1924	14	310,000	297,738
SW	19-27-6, September, 1922	16	1,585,000	1,724,378
NE	29-27-6, September, 1922	11	600,000	661,456
NW	30-27-6, April, 1922	16	663,000	741,267
	Total	174	$10,027,100	11,877,162
	Peters & Oliphant:			
NW	17-27-6, October, 1923	2	$82,000	76,983
	Prairie Oil & Gas Co.:			
NW	4-26-6, October, 1923	16	$360,000	1,058,083
NW	10-26-6, October, 1921	5	200,000	485,595
SW	10-26-6, December, 1921	5	200,000	219,305
SW	13-27-5, May, 1924	16	1,825,000	488,788
NE	30-27-6, March, 1922	16	700,000	864,564
SE	30-27-6, December, 1921	16	250,000	685,898
SE	32-27-6, March, 1922	16	800,000	1,064,645
SW	33-27-6, April, 1922	16	600,000	726,839
	Total	106	$4,935,000	6,598,920
	Producers & Refiners Corp. and Marland Oil Co.:			
NE	16-26-6, January, 1922	13	$136,000	333,886
	Producers & Refiners Corp.:			
NW	31-27-6, November, 1920	16	$2,100	1,385,992
	Roxana Petroleum Corp.:			
SW	4-26-6, February, 1921	13	$251,000	1,013,713
	Roxana Petroleum and Marland Oil Co.:			
NW	6-26-6, April, 1921	15	$6,600	596,132
NE	36-27-5, May, 1920	14	2,000	1,496,453
SE	36-27-5, December, 1920	13	7,000	550,709
	Total	42	$15,600	2,492,293
	Simons, Moore and others:			
SW	1-26-5, February, 1922	13	$3,100	356,729
NE	5-26-6, April, 1921	16	800	1,158,540
	Total	29	$3,900	1,515,269
	Sinclair Oil & Gas Co.:			
NE	1-26-5, May, 1921	16	$5,800	1,052,167
NE	15-27-5, June, 1923	16	800,000	1,258,594
SW	36-27-5, October, 1921	17	1,500	1,256,527
NE	19-27-6, March, 1923	16	615,000	464,974
SW	20-27-6, March, 1923	16	415,000	542,895
SW	29-27-6, March, 1922	16	650,000	873,995
SE	29-27-6, June, 1922	16	410,000	914,325
NE	32-27-6, March, 1922	16	600,000	999,565
NW	33-27-6, June, 1922	16	300,000	464,456
	Total	145	$3,797,300	7,830,197
	Skelly Oil Co.:			
SW	26-27-5, July 1924	3	$395,000	6,153

(Continued on Page 114)

When Stamina Means Steady Production and Strength Insures Safety

ASK the drillers, the "roughnecks," the boys in the field what the stamina of Williams' "Vulcan" Tongs means to them in steady production and assured safety. Don't take our word for it—get *their* opinion, formed by practical experience with these tools during thirty years.

They'll tell you of the strength of the chain, proof-tested to 2/3 of its catalogued breaking strain; of the superior character of the entire tool, its ease of operation, efficiency and durability.

Ask THEM, or write us.

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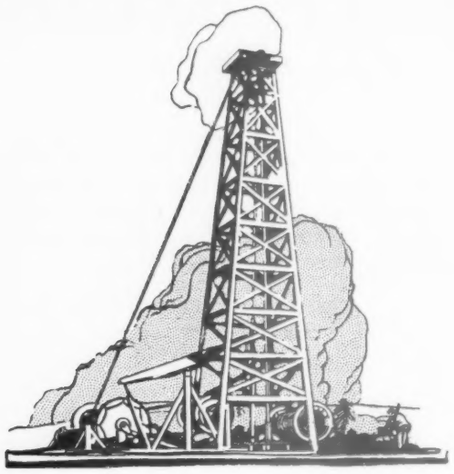
LOOK FOR THIS TRADE MARK

WILLIAMS

SUPERIOR DROP-FORGED TOOLS

"VULCAN" CHAIN PIPE WRENCH

SW 26-27-5, July 1924 ..... (Continued on Page 114)



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Drilling Cable

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"Spinners of fine cordage since 1869"
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WEST COAST GASOLINE AND KEROSENE STOCKS INCREASED DURING OCTOBER

Stocks of both gasoline and kerosene increased in the West Coast area during the month of October, according to the latest report of the Bureau of Mines. The increase in gasoline stocks totaled 23,886,950 gallons, the largest single monthly increase of the year. This increase was due primarily to the fact that gasoline shipments dropped from 99,759,330 gallons in September to 80,833,366 gallons in October despite the fact that the latter month had one more day than the former. Gasoline production showed a decline of approximately 4,000,000 gallons.

Kerosene stocks increased 2,436,294 gallons during October although gasoline shipments increased from 19,502,757 gallons in September to 25,955,438 gallons in October. This increase in consumption was more than offset, however, with an increase of production from 19,502,757 in September to 28,391,732 gallons in October.

The following table gives the monthly statistical report of kerosene and gasoline in California for the years 1922 and 1923 and the first 10 months of 1924:

Production of Gasoline by Months

(Unit of Gallons)

Month—	1924 Total Gallons	1924 Daily Average	1923 Total Gallons	1923 Daily Average	1922 Total Gallons	1922 Daily Average
January	115,330,234	3,720,330	92,686,090	2,989,874	44,750,331	1,444,849
February	112,082,190	3,864,903	92,852,538	3,316,162	43,806,932	1,564,533
March	126,043,182	4,346,317	104,402,122	3,367,810	49,141,955	1,585,224
April	120,364,468	4,012,149	102,428,548	3,414,285	50,991,900	1,699,730
May	122,345,924	3,946,643	112,314,674	3,623,054	52,468,152	1,692,521
June	116,779,487	3,892,649	115,316,719	3,843,891	54,961,369	1,832,045
July	102,279,720	3,299,346	121,212,438	3,910,079	59,063,530	1,905,273
August	108,092,466	3,486,854	109,165,919	3,521,481	67,817,696	2,187,668
September	108,883,009	3,629,433	103,618,605	3,453,954	70,139,443	2,337,981
October	104,720,316	3,378,075	119,134,600	3,843,052	65,873,412	2,124,949
November	.....	.....	106,195,727	3,539,858	64,586,228	2,152,874
December	.....	.....	103,872,185	3,350,716	69,856,800	2,253,445
Total	1,136,920,996	3,727,610	1,283,200,165	3,515,617	693,497,748	1,899,994

Movement From Refineries of Gasoline by Months

(Unit of Gallons)

Month—	1924 Total Gallons	1924 Daily Average	1923 Total Gallons	1923 Daily Average	1922 Total Gallons	1922 Daily Average
January	99,626,326	3,213,752	75,618,930	2,439,320	36,645,242	1,182,104
February	89,575,187	3,088,800	88,605,548	3,164,484	36,363,803	1,298,707
March	104,083,791	3,357,542	86,152,824	2,779,123	50,669,498	1,634,500
April	109,838,576	3,661,286	103,802,851	3,460,095	48,869,154	1,628,972
May	112,778,310	3,638,010	101,873,191	3,286,232	61,915,087	1,997,261
June	105,647,146	3,521,571	119,552,787	3,986,093	62,914,339	2,097,145
July	118,497,171	3,822,489	127,486,676	4,112,472	65,584,330	2,115,624
August	123,040,103	3,968,036	92,146,469	2,972,467	65,562,730	2,114,927
September	99,759,330	3,325,311	113,124,583	3,770,819	60,680,952	2,022,698
October	80,833,366	2,607,528	104,792,275	3,380,396	50,320,008	1,623,226
November	.....	.....	90,185,159	3,006,172	50,510,426	1,683,681
December	.....	.....	86,543,829	2,791,736	53,753,805	1,733,994
Total	1,043,679,314	3,421,899	1,190,786,190	3,262,428	643,789,374	1,763,698

Stocks of Gasoline Held at Refineries by Months

(Unit of Gallons)

Month—	1924 Total Stocks	1924 Monthly Surplus	1923 Total Stocks	1923 Monthly Surplus	1922 Total Stocks	1922 Monthly Surplus
January 1	191,780,375	—	99,366,400	—	49,658,026	—
January 31	207,484,283	15,703,908	116,433,560	17,067,160	57,803,115	8,145,089
February 28	229,991,286	22,507,003	120,680,550	4,246,990	65,246,244	7,443,129
March 31	251,950,677	21,959,391	138,058,780	17,378,230	63,718,701	•1,527,543
April 30	262,476,569	10,525,892	136,684,477	•1,374,303	65,841,447	2,122,746
May 31	272,044,183	9,567,614	147,125,960	10,441,483	56,394,512	•9,446,935
June 30	283,176,522	11,132,339	142,859,862	•4,266,108	48,441,542	•7,952,970
July 31	266,959,071	•16,217,451	136,585,654	•6,274,208	41,920,742	•6,520,800
August 31	252,011,428	•14,947,643	153,605,104	17,019,450	44,175,708	2,254,966
September 30	261,135,107	9,123,679	144,099,126	•9,505,978	53,634,199	9,458,491
October 31	285,022,057	23,886,950	158,441,451	14,342,325	69,187,603	15,553,404
November 30	.....	.....	174,452,019	16,010,568	83,263,406	14,075,803
December 31	.....	.....	191,780,375	17,328,356	99,366,400	16,102,995
Total		93,241,682		92,413,975		49,708,374

•Decrease. —Reduced. —Shortage.

Production of Kerosene by Months

(Unit of Gallons)

Month—	1924 Total Gallons	1924 Daily Average	1923 Total Gallons	1923 Daily Average	1922 Total Gallons	1922 Daily Average
January	24,877,077	802,486	15,759,996	508,387	17,211,218	555,201
February	23,387,949	835,284	17,712,987	632,607	17,478,297	624,225
March	20,917,092	674,745	18,405,327	593,720	15,750,676	508,086
April	23,930,144	797,671	18,359,965	611,999	14,722,826	490,761
May	24,026,326	775,043	20,519,907	661,932	18,931,766	610,702
June	20,108,017	670,267	17,998,275	599,943	17,713,315	590,444
July	20,218,984	652,225	16,285,670	525,344	15,313,484	493,983
August	22,435,015	723,710	16,399,772	529,025	14,445,615	465,988
September	23,536,960	784,565	17,296,559	576,552	16,431,183	547,706
October	28,391,732	915,862	15,468,701	498,990	14,932,890	481,706
November	.....	.....	17,941,590	598,053	18,012,792	600,426
December	.....	.....	23,991,576	773,922	14,347,967	462,838
Total	231,829,296	760,096	216,140,319	592,165	195,292,029	535,047

Movement From Refineries of Kerosene by Months

(Unit of Gallons)

Month—	1924 Total Gallons	1924 Daily Average	1923 Total Gallons	1923 Daily Average	1922 Total Gallons	1922 Daily Average
January	26,767,633	863,472	25,008,328	806,720	15,191,410	490,045
February	19,372,047	691,859	15,898,802	567,814	16,777,098	599,182
March	12,289,068	396,422	20,527,683	662,183	20,869,690	673,216
April	30,458,089	1,015,270	13,378,980	445,966	14,464,545	482,152
May	20,051,493	646,822	20,623,245	665,266	16,525,034	533,066
June	26,114,711	870,490	20,018,536	667,285	11,286,092	376,203
July	21,756,808	701,833	9,768,029	315,098	18,776,818	605,704
August	21,407,137	690,553	20,560,453	663,240	13,679,116	439,780
September	19,502,757	650,092	12,868,541	428,951	13,193,406	643,046
October	25,955,438	837,272	18,305,447	590,498	19,934,240	652,466
November	.....	.....	18,830,622	627,687	19,561,903	305,926
December	.....	.....	17,742,217	572,330	9,483,703	
Total	223,675,181	733,361	213,530,883	585,016	189,743,143	519,844

Stocks of Kerosene Held at Refineries by Months

(Unit of Gallons)

Month—	1924 Total Stocks	1924 Monthly Surplus	1923 Total Stocks	1923 Monthly Surplus	1922 Total Stocks	1922 Monthly Surplus
January 1	30,227,403	—	27,617,967	—	22,069,081	—
January 31	28,336,847	•1,890,556	18,369,629	•9,248,338	24,088,881	2,019,800
February 28	32,352,749	4,015,902	20,183,814	1,814,185	24,790,080	701,199
March 31	40,980,773	8,628,024	18,061,458	•2,122,356	19,671,066	•5,118,014
April 30	34,452,828	•6,527,945	23,042,443	4,980,985	19,929,347	258,281
May 31	38,427,661	3,974,833	22,939,105	•103,338	22,336,079	2,406,732
June 30	32,420,967	•6,006,694	20,918,844	•2,020,261	25,763,302	3,427,223
July 31	30,883,143	•1,537,824	27,436,486	6,517,641	25,299,968	•3,463,334
August 31	31,911,021	1,027,878	23,275,804	•4,160,681	26,066,467	766,499
September 30	35,945,224	4,034,203	27,703,822	4,428,018	29,304,244	3,237,777
October 31	38,381,518	2,436,294	24,867,076	•2,836,746	24,302,894	•5,001,350
November 30	.....	.....	23,978,044	•889,032	22,753,703	•1,549,191
December 31	.....	.....	30,227,403	6,249,359	27,617,967	4,864,264
Total		3,154,115		2,609,436		5,648,886

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GUATEMALAN SUES ROOSEVELT SONS AND TEX RICKARD ON CONCESSION

NEW YORK, Dec. 6—Kermit Roosevelt and his brother, Archibald, were made defendants with Tex Rickard, W. Forbes Morgan and the Rickard Exploration Co. in a suit for $215,000 filed by Humberto Blanco-Fombona, a Guatemalan, now consul to an English city. The complaint asserts the sum sued for is due for services and disbursements in obtaining an oil concession for the defendants from the Government of Guatemala.

Two applications were made in the Supreme Court for the dismissal of the complaint on the ground it contains matters which are of evidentiary nature, and also on the plea it does not state a cause of action.

The complaint alleges that in October, 1922, the plaintiff was negotiating with the Sinclair Exploration Co. looking to obtaining an oil concession in Guatemala, and to the annulment of laws in that country so as to permit foreign corporations to acquire larger concessions. Blanco-Fombona alleges that in February, 1923, he was notified to take up negotiations with "responsible parties in New York" by cabling to "Kermit."

The plaintiff alleges he did so, and that the defendants made an agreement with him in March, 1923, "looking to securing concessions and rights in Guatemala for the defendants," and under which he was to use his best endeavors to obtain the concessions wanted before March 6 last.

The plaintiff alleges the defendants were to deposit $20,000 in the Guaranty Trust Co. in New York, and they were also to guarantee they would establish credit in his behalf to the extent of $50,000. He states they agreed to pay him for services in stock at a valuation consisting of the difference between what the final contract with the Guatemala Government called for, and 20 per cent royalties, and were also to pay his expenses.

The complaint asserts as a result of his efforts the laws were amended and the concession granted. The defendants failed to act, however, Blanco-Fombona alleges, and the Government awarded the contract to another corporation. The plaintiff alleges he spent $15,000 in his negotiations, in addition to losing the benefit of his alleged agreement.

PRODUCTION OF FUEL OIL IN UNITED STATES

(Continued from Page 24)

It would therefore appear that even though we ran 520,000,000 barrels to stills in 1922—and 592,000,000 barrels in 1923—and 503,000,000 barrels in the first nine months of 1924 (or at the rate of 670,000,000 barrels for the entire year), we were not at the same time increasing the percentage of gas and fuel oil that we are making—but simply making more of it, as a result of running more oil to stills.

Undoubtedly the expansion of the market for fuel oil is keeping pace with the increasing amounts of fuel oil that are available—but even though the barrelage output is increasing, the percentage made, based on throughput, is not increasing. It would, therefore, appear that our present heavy stocks of fuel oil are the "by-product" of making enormous quantities of gasoline for our motor vehicles—rather than that our heavy stocks of gasoline were the by-product of making large quantities of fuel oil with which to compete with coal.

It is obvious that if the present percentage "recovery" of fuel oil holds for the next few years—at around 47 per cent—and the production of crude oil does not increase in the same proportion as the expansion that will undoubtedly come to all industries that use machinery, and especially to the industries built around the internal combustion engine, then the burden will pass, in much greater measure, from the producers of crude oil to the refiners with their cracking plants and to the manufacturers of natural gasoline. And the public will then get a new vision of the real value of gasoline.

Economic Impossibility

But if, during the next few years, we continue to bring in prolific new fields, and largely increase our stocks of both crude oil and finished products, it would inevitably follow that our heavy stocks of crude would hold the price of crude to relatively low levels—and that the surplus stocks of finished products would keep the price of gasoline down. As long as the law of supply and demand is broadly operative—and that will be as long as industries exist—we can't have huge stocks of crude oil and finished products and have high prices at the same time. It is an economic impossibility.

A summary of the percentages of the total output of fuel oil, by the different refining areas in the first nine months of 1924, shows the following:

	Per Ct.
California	32.7
East Coast	21.9
Texas	17.5
Total	72.1
Oklahoma-Kansas	9.7
Arkansas-Louisiana	7.2
Indiana-Illinois	5.4
Rocky Mountain	4.1
Pa. area	1.5
Total	27.9

The refineries on the seaboard—Atlantic, Gulf, Pacific—are now making 72 per cent of our fuel oil, while the "inland" refineries are making 28 per cent.

The area east of the Mississippi is making 28.8 per cent—the Mid-Continent and Gulf Coast 34.4 per cent—the Rocky Mountain area 4.1 per cent and California 32.7 per cent.

As 70 per cent of the population of the United States lives east of the Mississippi River—and as more than 70 per cent of our manufacturing is east of the Mississippi—it would seem that the bulk of the market for fuel oil lies east of the Mississippi—and that a substantial part of the Mid-Continent's 34.4 per cent of the total output would find its market in the East.

Situation in Stocks

Referring to Table 2 we find that on January 1, 1924, the stock of gas and fuel oil was 1,515,000,000 gallons and on September 30 it was 1,640,000,000 gallons—an increase of 125,000,000 gallons in the nine-month period.

On January 1, 1923, the stock of gas and fuel oil was 1,304,000,000 gallons and on September 30, 1923, it was 1,481,000,000 gallons—an increase of 177,000,000 gallons, compared with 125,000,000 gallons increase during the corresponding period of 1924.

In the first nine months of 1924 we produced 9,966,000,000 gallons of gas and fuel oil compared with 8,873,000,000 gallons during the corresponding period of 1923—an increase of 1,093,000,000 gallons. In other words, during the first nine months of 1924, we increased our production about 12.3 per cent over the corresponding period of 1923.

In the first nine months of 1924 we produced 6,643,000,000 gallons of gasoline compared with 5,620,000,000 gallons in the corresponding period of 1923—an increase of 1,023,000,000 gallons, or 18.2 per cent.

It is therefore obvious that while both our fuel oil and our gasoline production increased 1,000,000,000 gallons in these two corresponding periods, the gasoline production increased 18.2 per cent compared with 12.3 per cent increase in gas and fuel oil. And while proportionately more fuel oil and less gasoline are made during the last three months of the year, the fact remains that when 1924 closes we will have increased our production of gasoline, compared with

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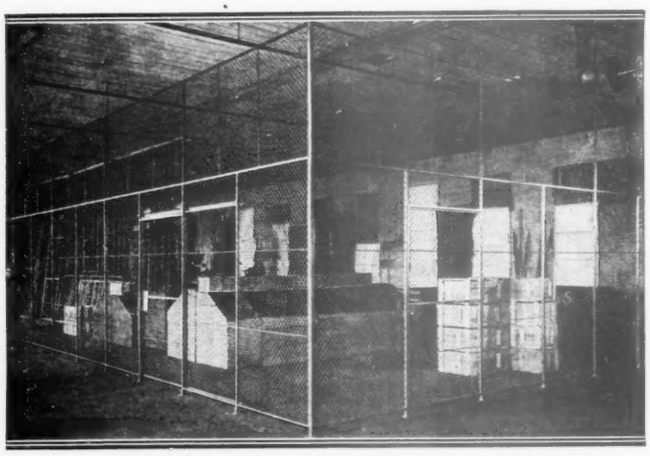

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1923, by a larger percentage than the percentage increase of fuel oil.

It would therefore appear that so far as the years 1923 and 1924 are concerned the refineries had operated on the basis that the market for gasoline would expand faster than the market for fuel oil and therefore increased their production of these two commodities proportionately.

Imports and Exports

In the first nine months of 1924 we imported 425,568,000 gallons of gas and fuel oil, compared with 408,706,000 gallons during the corresponding period of 1923—an increase of about 4 per cent.

In the first nine months of 1924 we exported 1,211,000,000 gallons of gas and fuel oil compared with 1,013,000,000 gallons during the corresponding period of 1923—an increase of 198,000,000 gallons, or 19.5 per cent.

In other words, during these two corresponding periods, our imports of gas and fuel oil increased 4 per cent and our exports increased 19.5 per cent.

During these two corresponding periods our imports of gasoline decreased over 46 per cent and our exports increased over 41 per cent.

Comparing the relative movement of these two basic products during these two corresponding periods we have:

Item—	Imports	Exports
Gas and fuel oil	Inc. 4%	Inc. 19.5%
Gasoline	Dec. 46%	Inc. 41 %

During the first nine months of 1924 we consumed 9,055,000,000 gallons of gas and fuel oil compared with 8,091,000,000 gallons in the corresponding period of 1923—an increase of 963,000,000 gallons, or 11.9 per cent.

In the first nine months of 1924 our domestic consumption of gasoline amounted to 5,653,000,000 gallons compared with 5,007,000,000 gallons during the corresponding period of 1923—an increase of 646,000,000 gallons, or 11 per cent. During these same two corresponding periods our production of gasoline increased 1,023,000,000 gallons, or 18.2 per cent.

Production and Consumption

Expressing the relations of production and consumption of these two basic commodities during these two corresponding periods we have:

Item—	Prod.	Consump.
Gas and fuel oil	Inc. 12.3	Inc. 11.9
Gasoline	Inc. 18.2	Inc. 11.0

However, the real test of the movement of these commodities is the relation that exists between production plus imports and consumption plus exports.

On this basis, during the first nine months of 1924 the production plus imports of gas and fuel oil exceeded the consumption plus exports by 125,000,000 gallons, or 1.2 per cent. During the corresponding period of 1923 the production plus imports exceeded the consumption plus exports by 176,000,000 gallons, or 1.9 per cent.

In the first nine months of 1924 the production plus imports of gasoline exceeded the consumption plus exports by 154,000,000 gallons, or 2.3 per cent. During the corresponding period of 1923 the production plus imports exceeded the consumption plus exports by 89,000,000 gallons, or 1.6 per cent.

Out of this maze of hundreds of millions and billions of gallons we can finally set up the following percentages which represent the excess of the production plus imports over the consumption plus exports of gas and fuel oil and of gasoline for the first nine months of 1924 and for the corresponding period of 1923:

	9 Mos. 1924	9 Mos. 1923
Gas and fuel oil	1.2	1.9
Gasoline	2.3	1.6

The fact is outstanding that the petroleum industry is now operating on the basis of hundreds of millions of barrels of crude oil and billions of gallons of gasoline and gas and fuel oil a year.

But this other fact is more outstanding—that in balancing up the production plus imports with the consumption plus exports, the supply is so nicely adjusted to the demand that the difference amounts to only a few per cent—a difference so small as to be wholly negligible in view of the huge totals involved.

LOGAN GAS CO. RAISE POSTPONED BY STATE

COLUMBUS, Ohio, Dec. 6.—The State Public Utilities Commission has issued an order against the Logan Gas Co. prohibiting the company from collecting a proposed service charge of 75 cents per month in 71 cities and towns, until the commission has ruled whether such a charge is justifiable. The commission set January 8 for hearing protests filed against the charge and to inquire into its reasonableness.

The new schedule bearing the 75 cents per month service charge were filed about a month ago. No increase per foot of gas consumed is included in the schedules, present meter reading rates remaining the same.

Following are the cities and towns affected: Adelphia, Amanda, Amherst, Ashland, Ashville, Berlin Heights, Birmingham, Carey, Chillicothe, Circleville, Clyde, Crestline, Edison, Findlay, Florence, Fostoria, Fremont, Galena, Hallsville, Hebron, Henriette Hill, Homer, Jacksontown, Kingstown, Laurelville, Lexington, Mt. Liberty, Monroeville, Millersport, Mt. Gilead, Marion, Mansfield, New Riegel, Norwalk, Plymouth, Polk, Shelby, South Amherst, Stoutsville, Sugar Grove, Sunbury, Sycamore, Thornville, Tiffin, Tiro, Union Furnace, Upper Sandusky, Utica, Willard, Ashland-Lorain field division, Galena division, Homer division, Newark division, Rockbridge division, Bellvue, Butler, Dover Heights, Belleville, Cardington, Centerburg, Litchfield, Spencer, Wellington, Athens, Chauncey, Newark, Elyria, Bucyrus and Westerville.

CALIFORNIA STANDARD VENEZUELAN CONTRACT

NEW YORK, Dec. 6.—Venezuelan Petroleum Co. has closed a contract with the Standard Oil Co. of California providing for development of about 25,000 acres in exploitation of its two concessions on the west side of Lake Maracaibo, south of La Paz and Concepcion Fields. The contract provides that the Standard Oil will start immediately to do the geological work necessary to select proper locations for an initial four wells, drilling to begin as soon as practical. Additional wells are to be drilled as conditions warrant.

After deducting taxes and 10 per cent royalty on production to the Venezuelan Government, the Venezuelan Petroleum Co. and Standard Oil Co. of California will divide the net remainder equally.

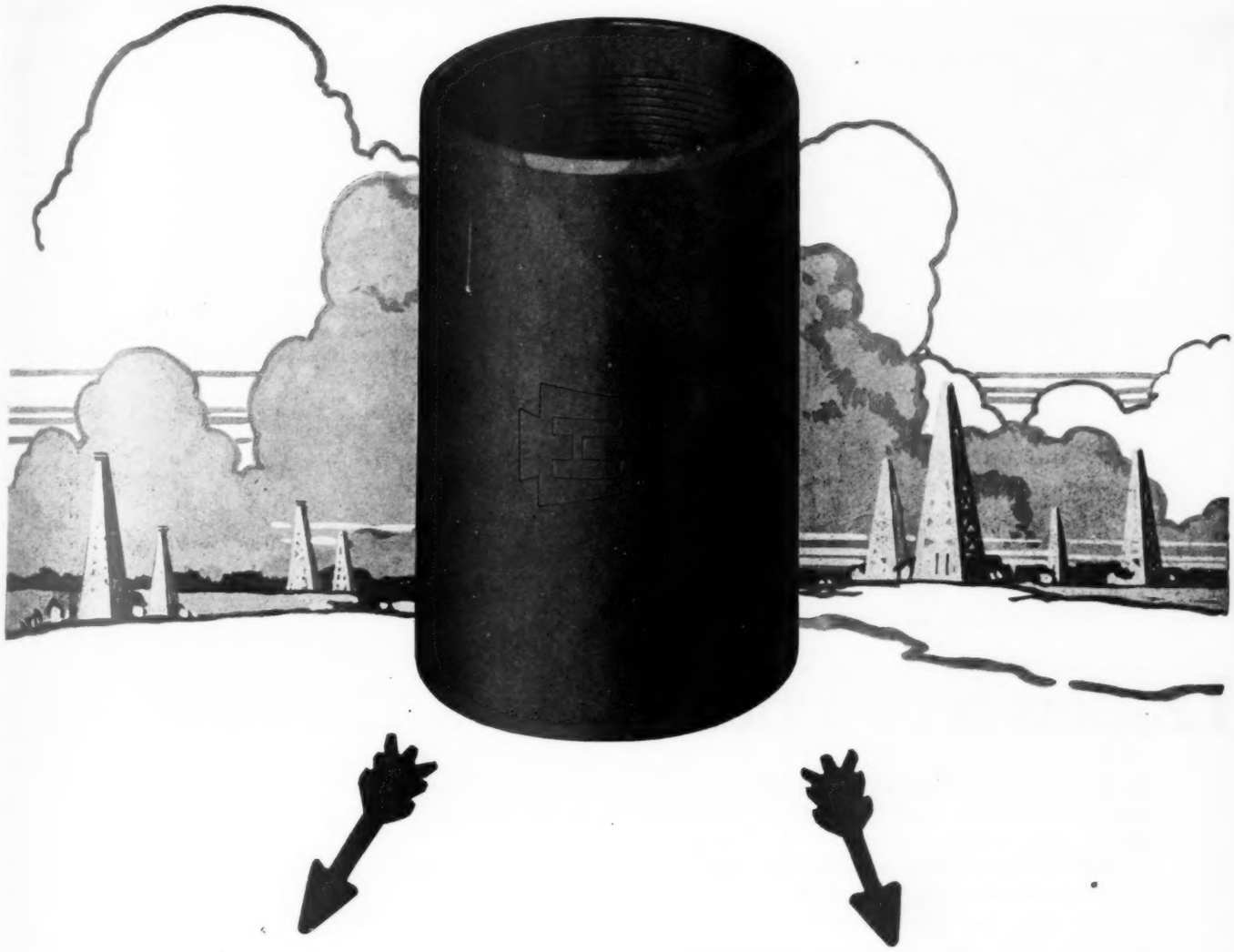
To avoid the risks and heavy expense of carrying on its own field operations, Venezuelan Petroleum Co. has adopted the policy of contracting portions of its acreage for development by important oil companies. It now has 24,374 acres under contract with Venezuelan Gulf Oil Co., subsidiary of Gulf Oil Corp. and 25,000 acres with Standard Oil of California, making total of 49,374 acres. In addition it has 17,036 acres for which it is carrying on negotiations for similar development.

BUYS 20 COMPRESSORS

The Phillips Petroleum Co. of Bartlesville, Okla., has purchased 20 165-h.p. Clark compressors for its new gasoline plant to be built in the Papoose Field near Wetumka, Okla. Construction of this plant is now under way. The Clark compressors were bought from the Gas Engineering & Construction Co. of Tulsa, Okla., who are exclusive agents for Clark gas engines and compressors in the Mid-Continent oil fields.

DEATH OF JAMES SHAW

CHATHAM, Ont., Dec. 6.—James Shaw, for nearly 50 years a resident of Petrolia, Ont., where he was associated in various capacities with the oil industry, died recently at Detroit, in his eighty-ninth year. A native of Kingston, Ont., Mr. Shaw came to Petrolia nearly 50 years ago, and was for 30 years in charge of the John McMillan pumping rigs on the twelfth line.



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NEW SIDELIGHTS ON THE BURBANK FIELD

(Continued from Page 106)

SW 23-27-5, June, 1923	15	740,000	537,225
NW 35-17-5, July, 1924	4	205,000	18,361
Total	22	$ 1,340,000	563,739
Tidal Osage Oil Co.:			
SE 4-26-6, October, 1921	11	$95,000	510,396
SW 6-26-6, February, 1921	16	206,000	606,442
Total	27	$301,000	1,116,748
Tidal Osage and Carter Oil Co.:			
SW 30-27-6, August, 1921	16	$26,000	931,247
Twin State Oil Co.:			
SW 18-27-6, May, 1924	16	$605,000	394,763
NW 36-27-5, February, 1921	8	800	208,723
Total	24	$605,800	603,486
The Texas Co.:			
NW 18-27-6, September, 1924	6	$141,000	35,126
Total Osage County	1,454	$52,241,000	76,312,097
KAY COUNTY			
S½ SW, 4-27-5	2		3,752
N½ SW¼, 10-27-5, May, 1923	8		1,020,813
N½ SW 15-27-5, April, 1923	8		812,402
S½ NE 21-27-5, April, 1923	1		27,969
Total	19		1,864,123
Dye & Tomlinson:			
S½ SW 15-27-5, January, 1923	8		783,916
Mid-Kansas Oil & Gas Co.:			
N½ NE 21-27-5, March, 1923	2		49,725
N½ SE 9-27-5, May, 1923	8		1,335,467
Total	10		1,384,792
Phillips Petroleum and Skelly Oil Co.:			
SE 16-27-5	7		145,201
W½ NW 22-27-5, March, 1923	4		214,695
E½ NW 22-27-5, May, 1923	8		729,396
W½ SW 9-27-5, July, 1924	1		6,167
Total	20		1,094,849
Twin State Oil Co.:			
NW 15-27-5, April, 1923	15		1,014,684
Carter Oil Co.:			
SW NW 3-27-5, June, 1924	3		87,126
S½ SW 10-27-5, June, 1923	8		1,427,805
Total	11		1,515,931
Cosden Oil & Gas Co.:			
NW 10-27-5, May, 1923	16		1,233,554
Gypsy Oil Co.:			
SE 4-27-5, May, 1923	16		1,052,459
NW SW 16-27-5, May, 1923	2		103,775
W½ NW 4-27-5, September, 1924	1		782
Total	19		1,156,999
Phillips Petroleum Co.:			
NE & N½ NW 9-27-5	12		1,492,259
S½ SE 9-27-5, May, 1923	8		1,039,960
W½ NE 16-27-5	2		244,566
N½ & SE¼ NW 3-27-5, May, 1924	2		3,374
Total	31		2,779,259
Sinclair Oil & Gas Co.:			
E½ SW 9-27-5, May, 1923	5		357,413
George S. Bole:			
E½ NW 4-27-5, August, 1923	3		252,466
Laurel Oil & Gas Co.:			
N½ SW 4-27-5, August, 1923	5		97,650
Prairie Oil & Gas Co.:			
S½ NW 9-27-5, January	4		252,297
Pure Oil Co.:			
E½ NE 16-27-5, August, 1923	5		205,471
Roxana Petroleum Corp.:			
NE 4-27-5, August, 1923	8		307,730
The Texas Co.:			
SW 3-27-5, October, 1923	16		469,859
Total Kay County	195		14,876,921
Grand total Burbank Field	1,649		91,189,118

VETERAN LINEMAN DEAD

OIL CITY, Pa., Dec. 6.—James Healy, veteran pipe line employe, aged 74 years, died at his home in Dotter, near Emlenton. Born in Canada in 1866 he entered the employ of the Central Petroleum Co. at Petroleum Center as gauger, working under his brother, the late John Healy of Bradford, who was superintendent for the company. Later he was transferred to Foxburg working for the Mutual Pipe Line Co., absorbed by the Standard Oil Co. Mr. Healy was then transferred to Washington, Pa., where for 25 years he was an employe of the South Penn Oil Co. When the Producers & Refiners Co. started operations at Dotter, Mr. Healy entered their employ and for 23 years had charge of the Dotter station until transferred to Oil City July 1, 1919 when he was retired from service as a gauger.

READY FOR BUSINESS

If your offering is good the readers of The Oil and Gas Journal are interested in it. They are always in the market for any attractive deal.

The readers of The Oil and Gas Journal are of the highest type. They are the real men of the industry and of that class which has not only the inclination, but also the means to secure what they want.

These men read the Classified Wants Section with interest. If you had your advertisement in the Classified Wants Section it would receive the same respectful consideration that thousands are giving the good advertisements already there.

STANDARD'S GERMAN CLAIM

WASHINGTON, D. C., Dec. 6.—Of awards by the mixed Claims Commission on claims of Americans against Germany for loss of lives and property damage during the war totaling $6,854,558, one was to the Standard Oil Co. New Jersey with interest from January 1, 1919, amounting to $6,250,000.

WELL PLEASED

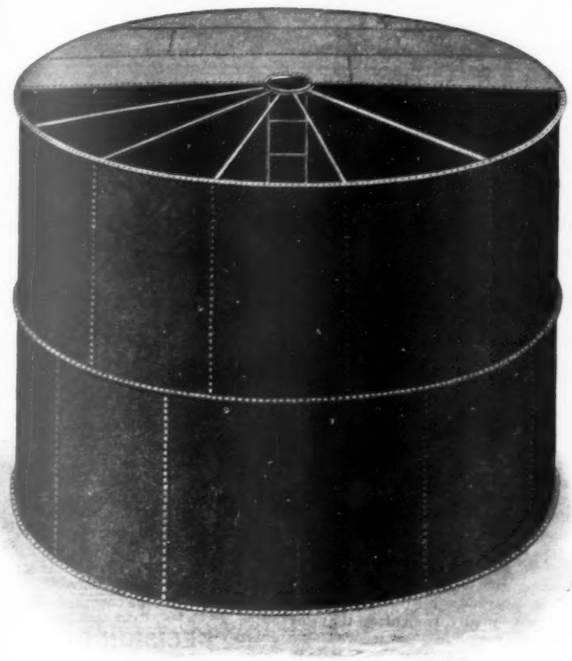
One of the advertisers in the Classified Wants Section writes as follows: "I have just arrived home. I am well pleased with results. I have inquiries from Tulsa, Enid, Oklahoma City, Dallas, Fort Worth, Los Angeles, Altoona, New York City, Pittsburgh, Geer, Va., Mobile, and many other places. I will mail another ad about December 15."

RIVER BED PERMIT

AUSTIN, Tex., Dec. 6.—Permit to drill its third well in the bed of the San Marcos River between Caldwell and Guadalupe Counties, has been granted by the oil and gas division to Receiver E. F. Smith for the Detert and others company. Smith was named receiver of the oil wells in the river bed pending outcome of litigation between the State and the United North & South Oil Co., over title to sand banks along the stream.

SINCLAIR ITALIAN LEASE

The Italian Senate says the Sinclair concession will not be operative until the bill for exploitation in Sicily is ratified.



Butler Bolted Tank, showing deck construction

"How much money will your bolted tank save us?"

A difficult question, but it can be answered. U. S. Government officials and other petroleum engineers and experts state that holding a tank under nominal pressure or vacuum insures its being really tight. Of course, this means a saving in keeping the valuable vapors from escaping.

Butler Bolted Tanks

Butler Bolted Tanks are vapor tight. This alone saves you 40 to 70 gallons of oil a day by retaining valuable vapors. 40 to 70 gallons is the amount that is lost in 250-barrel tanks that are not vapor tight. Just think of the saving in larger tanks—1,000 or 5,000 or 10,000-barrel! And in addition, keep in mind the tremendous saving obtained by keeping the gravity of the oil higher.

Are dependable—save money

It is easy to see why Butler Bolted Tanks are so dependable and why they save you so much money. It's the material used and the way the tanks are made. Steel of special grade is used—open hearth steel—steel that is blue annealed and copper bearing. It resists rust to an extreme degree and allows exact workmanship.

Note the illustration. This shows how easily a Butler Bolted Tank can be put up on account of its simplicity. Long life—simple construction—easy erection—durable, dependable material—these are the vital factors that save you money. *And the amount of the saving? Immeasurable!*

Write for attractive prices

Besides the extra quality that we offer in our tanks, we also quote interesting, attractive prices. What do you need? See our representatives listed at the left, or write or wire us directly for prices or special literature.

Speedy service for you!

So that you may get the kind of service you require, reliable organizations are located at the most advantageous points. They are in position to serve you and will make attractive prices at this time. Ask them for complete information, literature, etc. They are practical people and can furnish anything from a 65-barrel flow tank to a 10,000-barrel field tank.

Note the firm nearest to you. Keep in touch with it. It pays!

At Wichita Falls, Vernon and Olney, Tex.
M. & V. Tank Co.

At Fort Worth and Big Lake, Tex., Tulsa and Holdenville, Okla.
Drane-Humphrey Co.

At Casper and Salt Creek, Wyo.
May Tank and Supply Co.

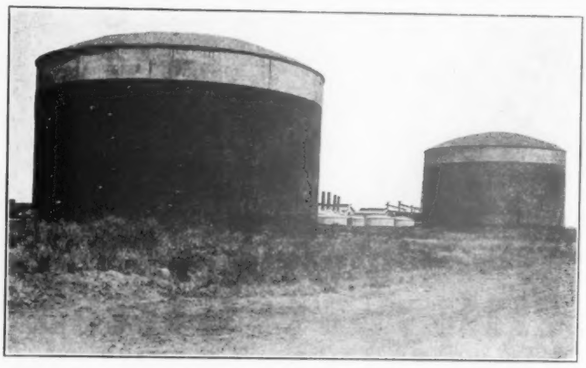
At Blackwell, Okla.
M. A. Trimmer

At San Antonio, Tex.
Wilson Tank & Culvert Co.

At Los Angeles, Calif., A. G. Bartlett Bldg. Tel. 65457
Butler Manufacturing Co.

BUTLER MANUFACTURING CO.

Kansas City, Mo. **Minneapolis, Minn.**



10,000-Barrel Tanks Erected for Meridian Petroleum Corp., Okmulgee, Okla.

WARREN CITY TANKS — Any Size - Any Place - Any Purpose — For Thirty Years the Seal of Satisfaction on Tanks and Refineries

To meet your every requirement effectively our entire organization is dedicated to one ideal--- quality of manufacture

No. 2 of a Series

This is advertisement No. 2 of a series designed to convey this company's service to the oil industry.

The WARREN CITY TANK & BOILER Co

WARREN, OHIO

OIL MEN TOLD NEED OF PUBLICITY IN EDUCATING THE GENERAL PUBLIC

By Bruce Barton

Before American Petroleum Institute at Fort Worth, Tex.

Almost all the agitators, all the self-appointed, self-proclaiming friends of the people, from the days of the Pharaohs down to the present hour, have promised everything, but the people pay a high price for such promises. They pay in disillusionment, in blasted hopes, in high taxes and in the evils of patent medicine economies.

In contrast to this record what is the record of organized business? Business does not find the people poor and leave them poor. The General Electric Co. finds the people in darkness and leaves them in light. The American Radiator Co. finds them cold and leaves them warm. The International Harvester Co. finds them bending their backs over the sickle and the rake and it leaves them riding triumphantly over their conquered fields. The automobile companies and you, gentlemen of the oil industry, find them shackled to their own front piazzas, with no horizon beyond their own front yards, and you leave them masters of time and space, citizens of a larger world, the equals in travel of their kings. Business is the real friend of the people. But I say to you that business will never occupy the place to which by its service it is entitled, until every president of every company recognizes that his office is a great public office as well as a great economic office, that you cannot serve people unless you are understood and trusted by people, that you cannot have the reward which you merit as friends of the people unless you take the trouble—and a great deal of trouble — to show yourselves friendly.

Educating the Public

Any industry which lets every Tom, Dick and Harry talk to public while it is silent, or sits supinely by and allows itself to be advertised by stock salesmen, by politicians hungry for the front page, by district attorneys who want to be governors, is unfair to its stockholders and has no right to complain if the people resent and condemn what they never have been taught to understand.

Theoretically everybody agrees to that of course, but I am constantly amazed by the casual fashion in which this vital subject is handled. You write it down "Publicity and Advertising" as No. 11 on the agenda of your executive committee, and then you adjourn before you reach No. 11.

When you think of public relations you have got to subordinate yourselves and think in terms of the other man's interest. Most industries when they advertise or start to "tell their story," as they say, make a mess of it.

Your plants are not for sale and there is no use talking about them. Your size is not for sale and size is of no interest to the public except as it results in cheaper and better service. Your motives are not for sale and there is no use proclaiming them. You cannot take full pages in the newspapers and say to the public: "We are honest and we are spending a million dollars a year to tell you so."

The answer of the public is: "Save your million dollars and reduce the price of gas."

Rich in Imagination

Of course to tell your story in terms of the other man's interest requires imagination. But what a rich field for the imagination your business presents, and how you have neglected it!

Stand for an hour beside one of your filling stations. Talk to the people who come up to buy gas. Discover for yourself what magic a dollar's worth of gasoline a week has worked in their lives.

Here comes Jacob Poletzka. Jacob was born in Austria. His father and mother were never more than 10 miles outside the limit of the city where the old man worked. Their home was under the very shadow of the smoke stacks. They were bound hand and foot to a single dingy neighborhood.

Not so with Jacob. He works in the smoke of the city to be sure, but he lives in the suburbs and has his own garden. His children are healthier; they go to better schools. On Sundays he packs up a picnic lunch and bundles the family into the car and has a glorious day in the woods or at the beach. When he has to work at night he can sleep in the day time for it is quiet where he lives and the air is pure.

And all of this is made possble by a dollar's worth of gasolne!

My friends it is the juice of the fountain of eternal youth that you are selling. It is health. It is comfort. It is success. And you have sold it merely as a bad smelling liquid at so many cents per gallon. You have never lifted it out of the category of a hated expense. It is an item for father to grumble about in the family budget. It is something for mother to economize on even though she has to drive 5 miles out of her way to save a cent a gallon.

There is a magnificent place for imagination in your business, but you must get on the other side of the pump. You must put yourself in the place of the man and the woman in whose lives your gasoline has worked its miracles.

DECISION IN 60 DAYS IN WICHITA GAS CASE

WICHITA, Kans., Dec. 6.—A definite decision upon the jurisdiction of the United States Circuit Court of Appeals in the Wichita gas surcharge case, is expected within 60 days, Earl C. Elliott, city manager, says. Mr. Elliott, with Robert C. Foulston, city attorney, was to have gone to St. Louis, to argue the case, but a telegram was received from the Empire company agreeing to submit the case on brief, which did not necessitate an oral argument.

The city bases its contention that the United States court does not have jurisdiction, on two points:

First, that the amount involved in the case is less than the amount necessary to bring it before the court; and, second, that the Kansas Public Utilities Commission, which made the decision awarding the surcharge to the Empire company, had no right to do so, in view of the recent decision of the United States Supreme Court that the company in question was not under the jurisdiction of the utilities commission, but under the Interstate Commerce Commission.

The case is technically over the surcharge against Earl C. Elliott, as a private citizen. It involves $16, but represents the same condition affecting every gas user.

The pipe line company contends that the single case in which Elliott is inolved does not constitute the entire sum involved, but that the other cases, totaling $195,000 should also be considered. It was upon this point that the case was being argued when the supreme court made the decision referred to. Should the circuit court of appeals rule that the case is out of its jurisdiction, it will be returned to the district court of Sedgwick County for trial.

JOINS ATLAS PETROLEUM CO.

T. E. Meece, for several years sales manager of the Champlin Refining Co. of Enid, Okla., has joined the Atlas Petroleum Co. He will be manager of refined oil sales with offices in Kansas City, Mo. Mr. Meece is widely known in Mid-Continent refinery circles and jobbers of the Middle West due to his long connection with the Champlin company. The Atlas Petroleum Co. was recently organized to market petroleum products. E. F. Borgolte, formerly vice president of the Acme Petroleum Co., is president of the company.

Science Takes the Place of Chance in Oil Production

Talk to any average outsider, mention oil, and what thought enters his mind?

A spirit of gamble—big chances—huge losses—great gains.

—a natural result of the days when oil prospecting *was* mostly a gamble.

But gradually, as the influence of science in oil producing increases, the element of chance is reduced.

No longer is the wildcat sunk according to hunches or accidents. Before drilling is begun, the geologist with his studies of paleontology, stratigraphy and structural geology, gives information that makes the presence of oil at least a possibility.

Now, if science is necessary in determining where wells should be drilled, certainly it is just as necessary to let science *safeguard production* after a well has been found to hold oil.

Can you imagine the *chance* an operator takes who spends $10,000 to $125,000 to drill a well, finds it a producer, and then to save a comparatively small sum runs the risk of losing a great deal of his production, bringing in excessive cut oil and B. S., increasing his costs and even *killing his well?*

This is exactly what any operator does who fails to *complete* his well by properly cementing it.

Think of the wells you know about yourself. How many millions of dollars are lost every year because of *casing collapse*—entirely avoidable by proper cementing? How much is lost thru *corrosion of casing*, likewise preventable by a tight jacket of cement? How many expensive, sometimes even ruinous, water troubles are caused by upper water which could have been kept out by scientific cementing? How many wells long since killed could still be profitable producers if water had been excluded by an everlasting lining of cement?

Scientific oil well cementing is not an "accessory" in the modern well. It is a necessity. It is production insurance—an eternal safeguard against the most serious hazards that can befall a well.

No well, cable tool or rotary, is properly completed that is not properly cemented. If you believe in insurance, you believe in Halliburton Oil Well Cementing. Ask for details.

HALLIBURTON OIL WELL CEMENTING CO., Duncan, Okla.

Equipment Available for all Fields

HALLIBURTON

Scientific Oil Well Cementing

116

O'Brien Structural Steel Derricks

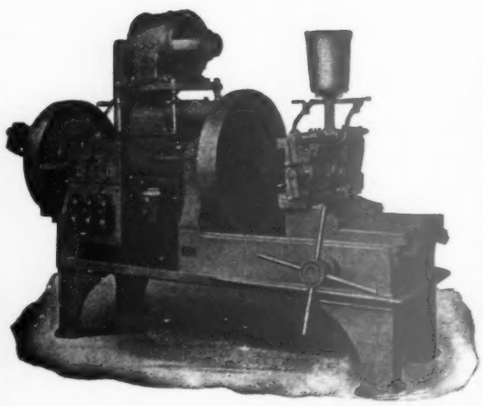
Why You Should Buy Them

Built of the same material as bridges and skyscrapers. No material lighter than one-quarter inch. Riveted double splice joint. Furnished in any size desired. Re-inforcing legs for light derricks

O'Brien derricks sold for continual use.

O'Brien Steel Construction Company
Washington, Penna.
Rig Equipment Company, Sand Springs, Okla.

Pipe Cutting and Threading Machinery



The oil business is one of heavy duty therefore requires heavy duty machines. We have them.

Sizes up to and including 24"

Belt, Motor or Steam Engine Driven
Also
Equipped for Gasoline Engine Drive

THE COX & SONS COMPANY
BRIDGETON, NEW JERSEY
Business Established 1868

CONCLUSIONS REACHED ON TETRAETHYL LEAD

It would be "folly" to discontinue the manufacture of tetraethyl lead because of the recent misfortune at the Standard Oil Co.'s plant at Elizabeth, N. J., according to a statement issued last week by the American Chemical Society, setting for the conclusions reached in an investigation directed by Dr. Harrison E. Howe, editor of the society's official journal.

That the hazards of manufacture of tetraethyl lead are "not greater than in many manufacturing processes"; that by "working in enclosed systems, safety is obtainable"; that "perhaps the greatest hazard is the indifference which not only workmen but even chemists come to have for dangerous work with which they are familiar"; that the poisoning due to contact with this lead compound "does not appear to be cumulative and is thought to disappear by way of perspiration and body fluids if the man affected is promptly removed from contact with the material"; that "the motorist meets no hazard in the use of the ethyl gas, and clearly shares only such hazards as may threaten the general public" from the discharge into the atmosphere of "some 2 or 3 tons of lead compounds per million gallons of gasoline burned"; and that "the public is not nearly so concerned as are the manufacturers who realize to what extent they would be the subject of attack should it develop that the public is endangered by the use of this fuel" are some of the significant findings of the investigation.

"During the development work," the report states, "lives have been lost, but with a better understanding of the effects of tetraethyl lead, illness has been steadily reduced among the workmen until, like many other toxic materials, it can now be produced in large quantities with safety.

"Obviously there are hazards involved, these being: First, in manufacture; second, in distribution and handling; third, in the use of the treated gasoline and, finally, the possible hazard to the public on account of the lead compounds thrown into the atmosphere. What does the evidence on these hazards indicate?

"Unquestionably the manufacture of tetraethyl lead is hazardous. The men engaged in this work are so informed and receive extra compensation. Their condition is carefully watched by physicians. This type of poisoning differs from that of other lead compounds in that the tetraethyl lead seems to enter through the fatty tissues and to be deposited as such in various parts of the body, including the brain, where it remains unchanged.

"It does not appear to be cumulative and is thought to disappear by way of perspiration and body fluids if the man affected is promptly removed from contact with the material. The men who lost their lives were examined frequently for plumbism and 40 others affected at the same time have been saved. . ."

Differing fundamentally with this report is that of Dr. Andrew F. McBride, state commissioner of labor of New Jersey, made to Governor Silzer last week. "The production of tetraethyl lead has been permanently discontinued in the Bayway plant of the Standard Oil Co.," Doctor McBride's report states, "and I have been assured by a representative of the company that the old process will not be used again. . . I am opposed to any attempt to again produce this material by the same processing methods that were used in the past, as experience has demonstrated that workmen cannot be safeguarded against the effects of poisonous contact."

Although doubting the efficiency of the gas masks used, Doctor McBride finds that "the Standard Oil Co. adopted every measure of precaution of protection within the purview of the experience of the engineering and medical divisions of the corporation."

The necessity for continuous prudence and caution on the part of workers, and the indifference of the average man to danger, and the intricate methods of manufacture, allowing the workmen to come in contact with the fluid, were some of the reasons given by Doctor McBride for his opposition to the old methods of manufacture.

USED CEMENT TO STOP FIRE FROM FLOW LINE

An unidentified roustabout showed the way in putting out the fire on the McDaniel lease in the Tonkawa oil field which destroyed three rigs and caused a loss of $25,000 Saturday night and Sunday.

He developed an entirely new method of fighting oil fires. A wooden rig, ignited by friction of a rope on a wooden pulley, had fallen to the ground, breaking a flow line and permitting a stream of burning oil to pour out.

Little headway was being made when the roustabout grabbed a 100-pound sack of cement and threw it on the break in the flow line. Others followed his example. The fire burned the sacks away and the released powder combined with the oil in a thick paste which was finally set into a solid mass by the terrific heat, automatically closing the break. With the supply of fuel feeding the flames cut off, steam was successful in extinguishing the remainder of the fire.

CHRISTMAS GIFT

With the approach of Christmas, the question of worth while gifts for your friend presents itself.

You want to give him a gift that will please him. If he is in any way connected with the petroleum industry he certainly would appreciate receiving The Oil and Gas Journal every week. It would be a constant reminder of your friendship.

Send us your friend's name and address with a remittance of $6.00 for one year, or $3.00 for six months and we will start his subscription with the Christmas number.

He will be advised of your thoughtful remembrance.

Mail your order to The Oil and Gas Journal, Box 2004, Tulsa, Okla.

NEGRO OIL MILLIONAIRE DIES

SHREVEPORT, La., Dec. 6.—Joe E. Herndon, a regular old fashioned "corn field darky," died at his home in Texarkana, Ark., recently, aged 80 years and worth more than $1,000,000. Herndon had worked hard all his life and was the owner of a good farm in Caddo Parish, when the discovery of oil made him suddenly rich. He then went to Texarkana and purchased a home where he has been living quietly and at ease for several years. He leaves no children and his only living relative is a sister living near Belcher, La.

HELPFUL

The Oil and Gas Journal Classified Wants Section is the premier of all oil publication classified sections.

It has been elevated to its high position of respect by the men of the industry because of its reliable and helpful service to them.

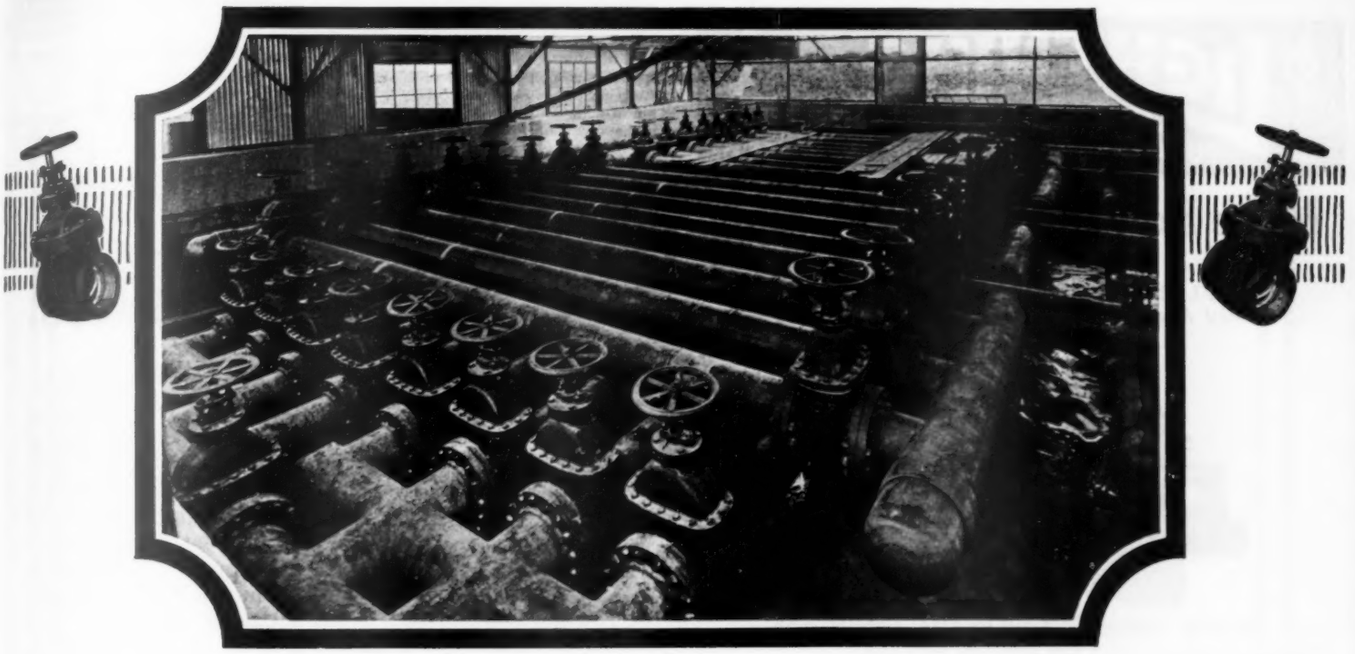
This reliable service is at your command. It will help you.

HUMBLE CO. COMPLETES

WICHITA FALLS, Tex., Dec. 6.—The Humble Pipeline Co. has completed its 52-mile combination 6-inch and 4-inch pipe line to South Vernon, Wilbarger County, and run the first oil. The line is built from the company's line in south Archer County, Swastika, to the South Vernon Field, and consists of 35 miles of 6-inch and 17 miles of 4-inch pipe. It is the fourth line to the field.

BULGARIAN GRANT TO SHELL CO.

The Bulgarian Government has asked Parliament to approve a 123,500-acre oil concession to the Royal Dutch-Shell, drilling to begin within six months, the State receiving 20 per cent of oil produced.



"Now We Buy Gate Valves on a Basis of Longer Life at Lower Cost"

Thus spoke the purchasing agent of a prominent refinery. "For longer than I care to remember, all gate valves to me were *just gate valves.* When new installations were needed we shopped around for prices and the order went to the lowest bidder. Then when ill-fitting seats began to leak and parts wear out, necessitating replacements, we blamed not any particular gate valve, but all valves in general.

"Now we O. K. the valves before we O. K. the order. We know that Darling Gate Valves cost slightly more by the valve but far less by the year of service. We know that their ability to stay tight, their ease of operation and long life without repairs or replacements make Darling Valves a true economy."

Others are realizing a big saving by using the right kind of valve—you can do it, too. Let us send you diagrams showing details of construction. Sent upon request together with catalogue.

DARLING VALVE & MANUFACTURING CO.

Williamsport, Pa.

NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:

Frick-Reid Supply Co., Tulsa and Branches — International Supply Co., Tulsa and Branches

Atlas Supply Co., Muskogee and Fort Worth — Petroleum Supply Co., Houston

California Distributor:

Petroleum Equipment Co., Los Angeles

TRADE DARLING MARK

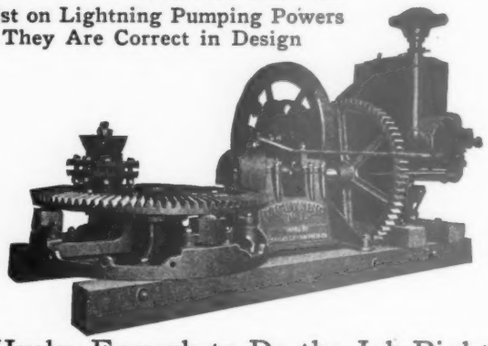
DARLING GATE VALVES

LIGHTNING
OIL FIELD SUPPLIES
PUMPING POWERS, JACKS, STUFFING BOXES, ETC.

More Power—Less Vibration

Instant Service

Insist on Lightning Pumping Powers
They Are Correct in Design



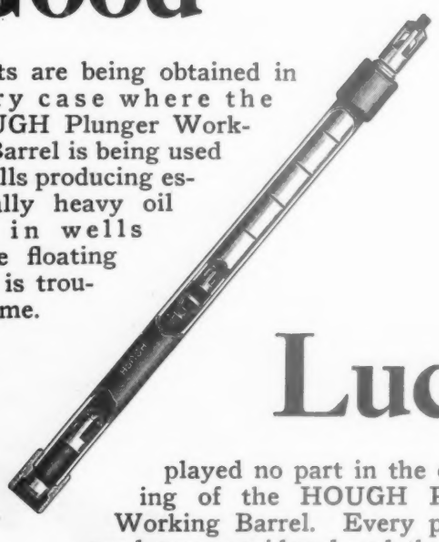
Husky Enough to Do the Job Right

The reliable eccentric motion does away with jerky lines.
Built in three sizes:
No. 4—Belt Drive, weight 6,500 lbs. For deep wells.
No. 2—12 H. P. engine, weight 4,600 lbs.
No. 1—6 or 8 H. P. engine, weight 3,200 lbs.
Turntable gear is easily removable and having a broad face, coarse teeth and large diameter will stand up to the heaviest loads.
Shackle lines set low to the ground (13 in.) eliminate excessive strain.
Quickly installed.

Oil Field Supply Dept.
KANSAS CITY HAY PRESS COMPANY
Kansas City, Mo.

Good

results are being obtained in every case where the HOUGH Plunger Working Barrel is being used in wells producing especially heavy oil and in wells where floating sand is troublesome.



Luck

played no part in the designing of the HOUGH Plunger Working Barrel. Every possible need was considered and the result is a plunger working barrel adapted to any field.

THE CHARLES N. HOUGH MFG. CO.
Franklin, Penna.

Products that cut down your underground overhead

OIL AND GAS MEN TOLD OF ONTARIO POSSIBILITIES

(Continued from Page 60)

where the minor folds occur, without studying the sub-surface geology with the aid of a light drilling rig capable of drilling a few hundred feet. By the proper use of such equipment drilling to a known horizon of rock, comparative elevations of the Delaware limestone or some other definite "key" formations may be determined, and favorable structures thus located without undue expenditure of money in "wildcat" effort.

The glacial debris over southwestern Ontario varies from a few feet to about 300 feet. I have yet to see an instance in southwestern Ontario where favorable structure exists and the necessary cap rock occurs to seal the structure and prevent the escape of oil or gas that these products do not occur in commercial quantities within that area.

Our "reservoir" rocks in the Devonian and Silurian are so uniformly porous, that structure seems to be the most important determining factor for production. The structures are usually some form of elongated dome or anticline, in many instances the longest axis running from east to west. Very abrupt dips often occur on the north flanks while the other dips are more gradual.

Must Exclude Water

I need not remind operators here present of the importance of excluding all upper waters from the well by casing before penetrating the "reservoir" rocks with the drill in order to determine the presence of oil or gas in these porous measures and at the same time protect them from the encroachment of upper waters.

A column of water 1 foot deep exerts a pressure of .434 pounds per square inch in all directions or 434 pounds in a well of water 1,000 feet deep or 1,736 pounds in a well of water 4,000 feet deep. It is easily seen, therefore, that it is most important that water be excluded from the test well before the drill is allowed to enter the oil or gas sands, as these products might be excluded from the well by the pressure of the water.

A trenton test, so called, was made some years ago near Stratford, Ontario, where the Trenton was reached at 2,360 feet and the well drilled a total depth of 2,386 feet with a hole full of water. At this depth the cuttings were saturated with oil, but the well was abandoned as "dry."

Many wildcat wells are lost and give no reliable or valuable information for lack of the supervision of a competent engineer to predetermine the size of the hole to be started, the sizes and weights of casing that should be used to insure the proper completion of a hole at least 5⅝ inch in diameter to its greatest depth. Such failures but discourage capital from further prospecting and in many cases unjustly condemn a district as "dry" which merits more business-like and extended development. Who would think of constructing a building to cost $10,000 to $30,000 without the advise of an architect?

The successful business men of this province should take a substantial interest in the development of our natural resources in gas and oil. Think of what it would mean, if by diligent and well directed effort we could develop these resources to such an extent as to provide an adequate domestic supply. Last year's imports of crude oil and its products amounted to over $20,000,000.

In conclusion, there is every reason for optimism. We have more favorable geological conditions than are found in Ohio and over a much larger area. I believe large stores of oil and gas lie within the area to which I have referred, but they are only to be found by diligent searching. Can we not rise to the occasion, and by a sturdy optimism, directed by careful preliminary survey, carry on a much more aggressive campaign in the development of one of our most important natural resources, that even now ranks fifth in point of value?

Too Much Business!

Although the Oil Industry was not going at top speed during the past few months, advertisers informed us that the Classified Wants Section brought them more business than they could handle.

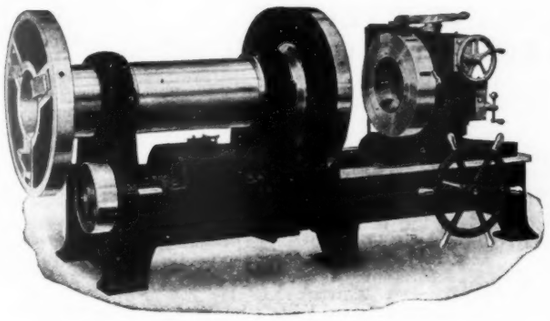
Conditions in every branch of the industry have improved. The demand for capable men, leases, production, equipment, and service of all kinds is increasing.

If a small advertisement can bring TOO MUCH BUSINESS in lax times it stands to reason that very satisfying and exceptionally good results can be obtained now!

Other men and organizations are using the Classified Section to advantage. You, too, can be successful. Turn to the Classified Wants Section and see how the other fellow is making good use of it.

Then mail your advertisement so that it will be in next Thursday's issue. The cost is so small that one favorable reply will pay for it a hundred times over.

The Oil and Gas Journal
Classified Wants Section
"Biggest in America"



Set It Once

Here is a machine that will do rapid and accurate work, cutting-off, threading and reaming pipe at one setting. These machines take their place among the other metal working machine tools and measure up to every demand for rapid and accurate work.

We have a machine for your requirements whether it be for small or large pipe.

What size do you need?

BIGNALL & KEELER MACHINE WORKS of the N. O. Nelson Mfg. Co.
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SPECIAL ALLOY STEEL **FORGING-BILLETS** **QUALITY and SERVICE**

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REFINING AND MARKETING

EXPORT DEMAND GROWS, SAYS H. F. SINCLAIR

The foreign market for American oil is improving rapidly, according to H. F. Sinclair, chairman of the board of directors of the Sinclair Consolidated Oil Corp., who is making a careful inspection trip through the entire Mid-Continent territory, accompanied by a group of officials of his company. "They are building a lot of small cars in Europe," he said, "and business should continue to increase. I do not think the fields of Russia, Persia or Mesopotamia will have any noticeable effect on the export demand for our oils."

While Mr. Sinclair maintained an optimistic outlook for the oil business as a whole, when he was in Tulsa, he warned against too much optimism at this time. "As I see it," "he said, "there is no special reason for pessimism, but the operators must not become too optimistic. I haven't gone far enough with the trip to give a statement regarding conditions. Nor have I formed an opinion yet regarding the probable effect of the Wortham discovery in Texas.

"The shame of it is that this great industry, from the producer to the refiner and all other branches hasn't been making any money. That isn't a healthy condition and it inevitably must be changed. But it will require conservative steps both in field operations and in banking circles."

With Mr. Sinclair on the trip were C. E. Crawley, vice president of the Sinclair Consolidated Oil Corp.; George H. Taber, Jr., vice president of the Sinclair Refining Co.; J. W. Carnes, vice president and general sales manager of the same company; E. W. Isom, vice president of the company, and G. B. Winship, a New York financial writer.

Most of the Oklahoma part of the trip was made by automobile, the party covering the principal fields and active centers thoroughly.

A. O. M. A. MEETING KANSAS CITY, MARCH 17

CHICAGO, Dec. 6. — The announcement has been made by Secretary H. G. James that the next annual meeting and convention of the American Oil Men's Association will be held at Kansas City in the rooms of the Kansas City Athletic Club on March 17, 18 and 19. The arrangements are all yet to be made except for the securing of the place of holding the convention. Mr. James is leaving for Fort Worth to attend the annual meeting of the American Petroleum Institute and on his return will begin the work of making this spring meeting a success. The headquarters for the new organization are now located at 624 South Michigan Ave. in the same building with the National Petroleum Marketers' Association and many of the prominent oil companies and convenient to the Standard building at 910 South Michigan Blvd., which also houses a large number of concerns in the petroleum industry.

H. L. DOHERTY ENTERTAINED

Among those who attended the dinner at the Hotel Tulsa given in honor of H. L. Doherty during his visit to the Mid-Continent by the Tulsa employes of the Empire companies, were M. R. Bump, W. A. Jones, P. R. Jones, L. F. Musill, H. D. Frueauff, W. A. Sinsheimer, all of New York City. H. R. Straight, F. C. Brown, D. W. Harris, C. E. Murray, W. J. Moran, E. L. Peck, I. Clay Briggs, H. O. Castor, F. B. Plank and F K. Haskell of Bartlesville; P. M. Miskell, O. G. Tuttle, C. A. Willis, A. C. Holmes, H. G. McLean, H. W. Camp and S. E. Murphy of Tulsa, and John S. Cordell of Boston.

COMPLAINANTS AND INTERVENORS TESTIFY AT ST. LOUIS I. C. C. HEARING

ST. LOUIS, Mo., Dec. 6.—The hearing of the Interstate Commerce Commission involving rates on refined products from the Mid-Continent area adjourned here today until Monday morning after having spent four days in taking additional testimony of complainants and intervenors.

The hearing will be resumed Monday morning with no definite date announced yet for the final adjournment. The hearing is concerned with dockets 15584, 15585, 16065 and 16066. The several complainants represent groups of refiners in Kansas, Kansas City, Northeast Oklahoma and North Texas seeking to obtain changes in recent freight rates on petroleum products. The hearing here follows those held at Excelsior Springs, Mo. in June and at Fort Worth in October. The refiners who are complainants are seeking both lower rates and changes in differentials.

At the Excelsior Springs and Fort Worth hearings a large part of the testimony of complainants was heard and the defendant carriers also partially outlined their position. In addition some testimony from intervenors representing other groups of refiners was taken.

It is now generally believed it will be necessary to adjourn this hearing without having taken any testimony in the export case in which The Texas Co. is attacking the export rates on petroleum products from points in the Mid-Continent area to the Gulf Coast. Additional testimony is to be taken Monday from representatives of the Ranger-Breckenridge group and it is expected the remainder of the week will be taken by the carriers and rebuttal evidence presented by the various complainants and intervenors. The carriers have advised that they have approximately seven witnesses yet to put on the stand in addition to the cross examination of witnesses whose testimony was presented at the Fort Worth hearing.

Hear Iowa Interests

The hearing here was opened Wednesday with the Iowa commission and various State and city organizations intervening. The Iowa interests were represented by Judge J. H. Henderson, State Commerce Counsel, and witnesses representing various traffic organizations and Chambers of Commerce testified. Among the witnesses were Leo E. Golden, representing the Davenport-Keokuk Chamber of Commerce and various commercial and industrial organizations at Davenport, Keokuk and other Iowa cities: B. J. Drummond, representing the Mason City Chamber of Commerce; William Parsons, representing the Iowa Railroad Commission; John C. Fay, Secretary and Traffic Manager of the Keokuk Chamber of Commerce; L. M. O'Leary, Traffic Manager of the Fort Dodge Chamber of Commerce; G. F. Wylie, Traffic Commissioner of the Greater Des Moines Traffic Bureau.

The Iowa interests, representing the consumers within that State, were interested in two phases of the present rate case—the one being the relationship of the destination groups within the State of Iowa, the other being the relationship between the various grades of refined products involved in this case so far as such relationship would affect the freight rates on the separate commodities. The various organizations alleged differences in rates between separate destinations that were prejudicial to their various industries. They also indicated that they did not think there was any justification in any increase in the rates on any refined petroleum products, with particular interest in the fuel and gas oil rates.

They stressed the fact that they could see no particular relationship between the rates on gasoline and kerosene and the rates on gas oil and fuel oil, both because of the value of the different products, and because of their commercial use being entirely different. The Iowa interveners consumed about a day and a half in entering their testimony.

R. P. Humes Testifies

On behalf of the Oklahoma complainants, R.P.Humes, sales manager for the Transcontinental Refining Co., testified on December 3 relative to the commercial interests, and how the commercial situation affected the refiners in the various groups. The complainants in docket 16065 endeavored to show by Mr. Humes' testimony that the Oklahoma Group Three refiners were compelled to compete large-

(Continued on Page 151)

BELGIUM TAKES STEPS FOR RESERVE OF OIL

The "Moniteur Belge" publishes a decree in which the wholesale importation of crude petroleum and its derivatives and residues is subject to the prior obtaining of a license delivered by the Belgian Minister of Finance on request of the interested party. The interested parties bind themselves to form and maintain permanently a reserve stock representing at least, for each of them the equivalent by class of produce, of one-quarter of the amount declared by them for sales within the country during the previous 12 months; and to deliver to the Government at its request, at the market price, and with priority, the quantities it may need.

This is said to be purely a military measure. The present tankage at Antwerp and Doornzele, (near Ghent), has a capacity of about 380,000 tons, practically the present volume of imports. The required nominal stock is in the neighborhood of 100,000 tons. The six great suppliers of the Belgian market are: The Belgian Benzine Co., (Royal Dutch), Alliance (Anglo-Persian), Purfina (Belgian Petrofina), and three American companies.

FEW PUMPS IN ITALY

The introduction of gasoline pumps in Italy will probably proceed slowly, according to foreign advices, because Italians are accustomed to buying their gasoline in 18-liter cans which are sealed at the distributing plants of the oil companies and unsealed only in the presence of the purchasers. Some effort has recently been made to install gasoline pumps, especially in the cities of northern Italy, but thus far only one has been installed in Naples.

CALIFORNIA'S GASOLINE TAX

California's 2-cent gasoline tax produced $13,068,168.15 during the first year of its operation. Of that amount $842,022.64 has been refunded to purchasers of gasoline for manufacturing and other purposes aside from motoring, leaving the net income to the State, $12,226,145.51, which has been apportioned, 50-per cent going to the State highway commission, and 50-per cent to the counties for road building purposes.

TO ADDRESS NEBRASKANS

Howard Bennette, managing director of the Western Petroleum Refiners Association, will deliver the principal address at the annual convention of the Nebraska Independent Oil Men's Association, to be held at the Rome Hotel, Omaha, December 16. Other features of the program will be announced later.

REGIONAL MEETING OF N. P. MANUFACTURERS

The second regional meeting of the Department of Manufacture of the National Petroleum Association will be held at Oil City, Pa., December 17. W. S. Zehrung, of the Pennzoil Co., will be chairman of the meeting.

Most of the morning will be spent in an inspection of the No. 2 plant of the Penn American Oil Co. and the plant of the Independent Refining Co. A luncheon will be held at the Y. M. C. A. of Oil City. The No. 1 plant of the Penn American Co. will be inspected in the afternoon. Those who cannot arrive until afternoon will be able to inspect all three plants. Those expecting to attend the meeting are asked to notify P. S. Tarbox, of the Independent Refining Co. Oil City.

A large attendance is expected at the Oil City meeting. At the first district meeting held at Bradford, Pa., last month 14 refineries were represented. At a result of the meeting it is planned to have the plant operators of that area get together once a month for round-table discussion of interesting problems and to hear addresses on new and interesting phases of refinery operations. Plans were discussed for the issuing of a useful bibliography of articles on refinery problems of such a nature that the members could easily determine from it what articles deserved their further investigation.

TO ERECT REFINERY AT TILLSONBURG, ONT.

CHATHAM, Ont., Dec. 8.—The Regal Oil Corp. of Toronto, Canada, has secured from the town of Tillsonburg certain concessions for the erection of a refining plant, of which the first unit will be constructed within a few months at an estimated cost of $100,000. The directors include W. B. Brooks, president; Col. Le Grand Reed Col. George C. Royce and Col. Sidney W. Bond, of Toronto; V. A. Sinclair, C. H. Denton and L. C. Vangeel, of Tillsonburg; Dr. C. H. Gilmour and Wilfrid W. Parry, Toronto; Frank L. Dusenbury, of New Orleans, and Wesley Morse, of Derry, La. The company is reported to have acquired a small production in Zone Township, Kent County, in addition to acreage in Louisiana; but is planning to operate for the present on crude from the Kentucky and Ohio fields, delivered at Port Burwell.

The Ontario legislature at its coming session is expected to authorize a gasoline tax of 2 cents a gallon. The new tax will be confined to motorists, the legislation providing for rebates to farmers and manufacturers using gasoline for other than motoring purposes, the object being to secure additional revenue for highway maintenance and construction. There will be no reduction in automobile license fees.

WAITE PHILLIPS CO. ORDERS 150 TANK CARS

The Waite Phillips Co. of Tulsa has placed an order for 150 tank cars with the General American Tank Car Co. of Chicago. The order, which is one of the largest placed in the Mid-Continent Field this year, calls for deliveries of cars starting next month. The additional cars will be used by the Waite Phillips Co. in handling the output of its new refinery at Wichita, Kans., recently purchased from the Sterling Oil & Refining Co. The company expects to start operating the Wichita plant soon after the first of the year.

One hundred of the new tank cars have a capacity of 8,000 gallons and fifty 10,000 gallons. The company now has a fleet of over 600 cars.

With our method of non-residuum operation the Dubbs Cracking Process is now producing in licensees plants from each 1000 barrels of Fuel Oil and Gas Oil, *once through*, the following results:

	Fuel Oil	*Gas Oil*
410 E. P. Gasoline	582 Bbls.	642 Bbls.
Gas Oil	250 Bbls.	225 Bbls.
Coke	20 Tons	16 Tons

Based on above, finished gasoline is being produced at a less cost than by any other known method

Universal Oil Products Company
Owners of the Dubbs Process
312 South Michigan Ave
Chicago Illinois

Development of Cracking Equipment

Early Difficulties Encountered by Dr. Burton and His Co-workers and Description of Cross, Dubbs and Fleming Processes

By R. H. Brownlee*
Consulting Petroleum Technologist, Pittsburgh, Pa.

The idea of cracking petroleum dates back before the birth of most living investigators of petroleum and its processes. In fact, its discovery, as applied to petroleum, may be classed as one of those mythical discoveries of time and chance that seem to tickle the imagination of the human race. With respect to inventions at least, we have for the most part retained our childlike wonder at something that happens without attempting to understand why. In fact, we prefer not to know, and love to believe that accidental and miraculous happenings gave us the mysterious mixture that puts pep in our motors or our glands as the case may be. This mixture has generally been discovered by some tyro and is usually alleged to be impossible of analysis by all the expert chemists in the world.

Atwood, however, in 1860 had received U. S. Patent 28246, which describes a method of increasing the yield of illuminants by cracking and distilling at atmospheric pressures. Young secured British Patent 3345 in 1865 for what is apparently the first process utilizing pressure to decrease the boiling temperature of the oil. Benton, U. S. Patent 342564 (1886) also applied pressure.

According to these two patents, the pressure was released prior to condensing the evolved vapors. The Dewar-Redwood process (U. S. Patents 419931 and 426173, issued in 1890, and several British patents) was the first both to distill and to condense under pressure. All of these investigators might be said to have been unfortunate in that they made their inventions before the time when there was any large demand for the products they could produce, for it will be recalled the industry was chiefly interested in kerosene. The production of gasoline by distillation to produce kerosene and lubricants even several years after the advent of the omnipresent flivver was in excess of requirements and to the writer's personal knowledge, gasoline was retailing at 20 and 25 cents. It was not until about 1910 that a few oil men began to see an impending shortage of their recent liquid white elephant. But before there began to be a real demand for gasoline, all of the above patents had expired and apparently had been largely forgotten, especially by the Patent Office examiner. In any event, up to this time no practical commercial equipment had been developed for carrying out the process of cracking heavy oils to form products of lighter specific gravity and to Dr. W. M. Burton and the Standard Oil Co. of Indiana deservedly goes the credit for this.

First Commercial Success

Regardless of all the present claims and counterclaims one fact at least can be proved beyond peradventure, and that is that the Burton equipment was the first of any design to produce real commercial quantities of gasoline. We are not speaking of what the Patent Office significance of "commercial quantities" may be, but in the language of the oil man, the Burton process produced sufficient gasoline "to fill a row of ninety-footers."

To a novice in the science and art of radio, it seems that almost any sort of arrangement or hook-up of heterogeneous coils, condensers, etc., will enable one to listen in, but further experience indicates a vast difference in the adaptability and efficiency of different sets. Analogously, almost any system of coils, stills, furnaces, towers, condensers, etc., might enable one to crack heavy oils to make some gasoline. It is not strange, therefore, that since the advent of cracking equipment there has been developed a large number of different types of equipment of which only a few have proved successful. In view of the intense activity along this line during the past decade in the United States, it is interesting to note that in England, where a notable but premature invention was made, there is only the most meager reference to cracking in two of the most recent and authentic books on oil and refining.

A great many factors enter into the development of a commercially successful process and without a doubt some valuable developments have never really arrived because of lack of financial backing.

The money spent by many minor companies without adequate return has been very large, while other relatively small companies have got excellent returns by following simple designs and methods of operation. The attitude of many who have backed cracking processes seems to be that they fully expect someone suddenly to hit upon a method of equipment that will immediately revolutionize the industry. They fail to realize that when such a process appears, if it ever does, it will necessarily be the product of, first, a high-class idea, and second, extended, painstaking effort.

The best known of the modern successful cracking systems are those of Burton, including the modifications of Humphreys, Clark and many others and called by many different names, and those of Cross, Dubbs, Fleming, Isom and Holmes-Manley. The first three of these have been described so fully and so often in the various technical journals that it seems scarcely necessary to do more than to summarize here some of the chief points relating to them.

Burton's Early Difficulties

The experimental work upon the original Burton still and the Clark modification started about 1910, when it was recognized that the demand for gasoline was likely to become very large. The cracking of oils in the vapor phase and the use of various catalytic agents such as ferric oxide and aluminum chloride were first tried. Especially with aluminum chloride excellent results were obtained from the standpoint of yield and quality of product. This work was virtually abandoned by the end of 1911, later to be more completely developed by Gray and McAfee. After this, the problem of pressure distillation was attacked—first, in a small still having a capacity of about 100 gallons. Some of the early work was done with residuum or crude oil from which the lighter valuable products had been removed. It was found, however, that while light low-boiling distillate was obtained when this product distilled, the quantity of coke deposited on the bottom of the still rendered it dangerous to hold pressure in the still. Accordingly, high-boiling distillates from the crude—that is, oils boiling over 225 degrees C.—were used. These distillates were distilled at a pressure of about five atmospheres and at a moderate temperature, so undoubtedly the cracking was chiefly done in the liquid phase. Low-boiling fractions of the light distillate from this operation were found to consist mostly of the paraffine series of hydrocarbons, which were easily deodorized and finished into marketable products. The yield of salable liquid that could be refined was considered satisfactory and the production of fixed gases and coke was relatively small.

Experimentally, the work was considered successful and preparations were made to install a larger still constructed of ½-inch steel plate and 8 feet in diameter and 20 feet long. The charging capacity was 6,000 gallons, and arrangements were made to operate this still at the cracking pressure of 100 pounds per square inch. Great difficulty was at first encountered owing to leakage around rivets and along the seams. Calking of the leaks of a pressure still was found to be a very difficult matter from calking a tubular boiler. Frequently it occurred that after the joints were calked the leaks were worse than ever. This difficulty was overcome when it was found that as the still remained in service the leaks were automatically stopped by carbon deposits. Many other problems were encountered. A safety valve that would operate in spite of the heat and carbon deposits was required. Some oils did not evolve enough gas to keep up the required pressure. Accordingly it was necessary to devise some method of relieving the pressure in the one case and adding to the vapor pressure in the other. This problem was solved by connecting a number of stills in such a manner that the extra gas from some made up for the shortage of others.

"It was also learned that a dephlegmating system was necessary, when operating at moderate pressures, to separate the light fractions and to return the heavier to the still. The first 6,000-gallon still was charged with 'fuel oil' ranging in boiling point from 200 to 350 degrees C. A 'substantial yield' of a product boiling from 50 degrees to 200 degrees C. was obtained. The loss averaged less than 3 per cent. The high-boiling residue from the still was similar to natural asphalt." And Dr. Burton further states, "Evidently we were doing artificially what Nature had done in ages gone by—viz., distilling petroleum under pressure."

During the experiments upon this larger still at times the problem of the deposition of carbon was considered almost unsolvable. The persistent efforts, however, of Dr. Burton and Dr. Humphreys and their assistants solved this problem by the introduction of movable plates in the stills which collected much of the carbon and prevented its deposition on the bottom of the still where it could cause a hot bottom. Several months were devoted to experiments with the 8x20-foot still. These were so successful that a large appropriation was given for the erection of 40 stills each of which could be charged with 8,000 gallons of raw material.

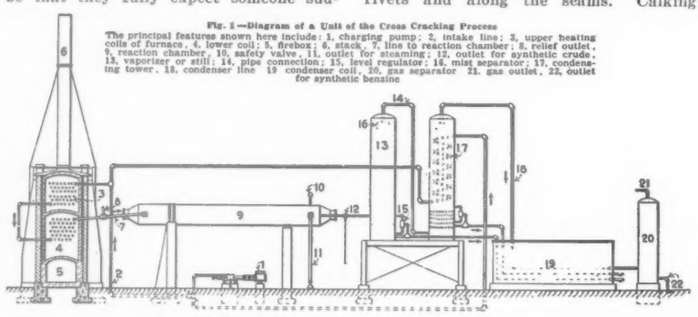

Fig. 1.—Diagram of a Unit of the Cross Cracking Process
The principal features shown here include: 1, charging pump; 2, intake line; 3, upper heating coils of furnace; 4, lower coil; 5, firebox; 6, stack; 7, line to reaction chamber; 8, relief outlet; 9, reaction chamber; 10, safety valve; 11, outlet for steaming; 12, outlet for synthetic crude; 13, vaporizer or still; 14, pipe connection; 15, level regulator; 16, mist separator; 17, condensing tower; 18, condenser line; 19, condenser coil; 20, gas separator; 21, gas outlet; 22, outlet for synthetic benzine

First Commercial Units

A great deal of doubt arose in the minds of many oil men as to the safety of these pressure stills, but in spite of the large number in use and the ever-present human equation, eight years elapsed before a fatal accident occurred. The first Burton stills built in 1913 were of about 250-bbl. gross capacity. The shell and ends were made of ½ to ⅝-inch mild steel plate, riveted and calked. The stills were provided with a safety valve draw-off line for the hot residue, with inclined vapor lines (that functioned also as a dephlegmator), with a condenser and a small round tank to act both as a trap and gas and liquid separator and with relief valves for gas and liquid.

The still was charged and heated to around 675 degrees Fahrenheit, whereupon cracking commenced and the pressure was built up to about 80 pounds per square inch by the gases evolved. Distillation proceeded over a period of 48 hours, in which time the temperature rose to 800 degrees Fahrenheit and 60 per cent of light distillate was collected. The residue from the still, which contained granular carbon and also probably highly carbonaceous substances in suspension, was charged into stills, where it was run to coke. The coke so formed was equivalent to 5 per cent of the oil charged in the coking still. The distillate from the coking still was found to have extremely low viscosity for its specific gravity and this product is the basis for another patent. This distillate was either re-run in the cracking stills or used for other purposes.

Improvements and Modifications

The greatest source of difficulty from the first was because of the fact that carbon was inclined to deposit on the still, causing the bottom to overheat and necessitating a shut-down. This was largely because of the poor circulation of the liquid in any simple still, and the solution of this difficulty, as before indicated, was accomplished and covered in patent granted to Dr. R. E. Humphreys.

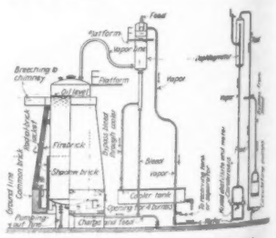

Fig. 2.—Diagram Showing the General Arrangement of the Fleming Still

Previous to the use of Dr. Humphreys' invention, which consisted of movable plates suspended from the side of the still upon which most of the carbon deposited, it was possible to distill only about one-third of the oil from the still before it was necessary to shut down. By using these so-called false-bottom plates, however, two-thirds of the oil could be distilled in the single operation.

Further improvements were made by E. M. Clark which involved manifolding of the condensers so as to allow for the

(Continued on Page 140)

*Reprinted from Chemical and Metallurgical Engineering.

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BARNSDALL

Engaged in Every Branch of the Petroleum Industry

The BARNSDALL REFINING COMPANY is one of the subsidiaries of the BARNSDALL CORPORATION, which has assets of over Forty Million ($40,000,000) Dollars;

With twenty-seven thousand domestic gas customers in twenty-eight municipalities in the states of New York and Pennsylvania;

With approximately 300,000 acres of oil and gas leases extending from Pennsylvania to California—with only ninety thousand acres operated and developed, upon which there are twenty-six hundred oil wells producing more than seven thousand barrels of crude oil daily and six hundred twenty-five gas wells, and six hundred miles of pipe lines;

With a fully equipped, complete, modern refinery located at Barnsdall, Oklahoma, in the heart of the corporation's mid-continent production, with over one hundred miles of pipe line transporting the crude oil to the refinery, where it is manufactured into high grade, uniform quality products, including Lubricating Oils, Cylinder Stocks and Wax;

With twelve absorption gasoline plants to extract the natural gasoline from the casing head gas of the producing oil wells and a fleet of steel tank cars for shipping and transporting all of its refined oils to market;

With an export department constantly preparing shipments of Barnsdall Products for export to European countries and South America, through the ports of New Orleans and Mobile;

With a large warehouse and storage plant in Kansas City, Mo., with distributing stations well located in the agricultural country of Missouri and Kansas.

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Our Own Refinery
Our Own Pipe Lines
Our Own Tank Cars

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Development of Cracking Equipment

Early Difficulties Encountered by Dr. Burton and His Co-workers and Description of Cross, Dubbs and Fleming Processes

By R. H. Brownlee*
Consulting Petroleum Technologist, Pittsburgh, Pa.

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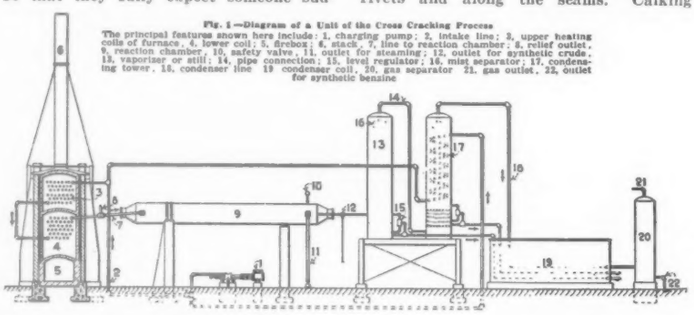

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The best known of the modern successful cracking systems are those of Burton, including the modifications of Humphreys, Clark and many others and called by many different names, and those of Cross, Dubbs, Fleming, Isom and Holmes-Manley. The first three of these have been described so fully and so often in the various technical journals that it seems scarcely necessary to do more than to summarize here some of the chief points relating to them.

Burton's Early Difficulties

The experimental work upon the original Burton still and the Clark modification started about 1910, when it was recognized that the demand for gasoline was likely to become very large. The cracking of oils in the vapor phase and the use of various catalytic agents such as ferric oxide and aluminum chloride were first tried. Especially with aluminum chloride excellent results were obtained from the standpoint of yield and quality of product. This work was virtually abandoned by the end of 1911, later to be more completely developed by Gray and McAfee. After this, the problem of pressure distillation was attacked—first, in a small still having a capacity of about 100 gallons. Some of the early work was done with residuum or crude oil from which the lighter valuable products had been removed. It was found, however, that while light low-boiling distillate was obtained when this product distilled, the quantity of coke deposited on the bottom of the still rendered it dangerous to hold pressure in the still. Accordingly, high-boiling distillates from the crude—that is, oils boiling over 225 degrees C.—were used. These distillates were distilled at a pressure of about five atmospheres and at a moderate temperature, so undoubtedly the cracking was chiefly done in the liquid phase. Low-boiling fractions of the light distillate from this operation were found to consist mostly of the paraffine series of hydrocarbons, which were easily deodorized and finished into marketable products. The yield of salable liquid that could be refined was considered satisfactory and the production of fixed gases and coke was relatively small.

Experimentally, the work was considered successful and preparations were made to install a larger still constructed of ½-inch steel plate and 8 feet in diameter and 20 feet long. The charging capacity was 6,000 gallons, and arrangements were made to operate this still at the cracking pressure of 100 pounds per square inch. Great difficulty was at first encountered owing to leakage around rivets and along the seams. Calking of the leaks of a pressure still was found to be a very difficult matter from calking a tubular boiler. Frequently it occurred that after the joints were calked the leaks were worse than ever. This difficulty was overcome when it was found that as the still remained in service the leaks were automatically stopped by carbon deposits. Many other problems were encountered. A safety valve that would operate in spite of the heat and carbon deposits was required. Some oils did not evolve enough gas to keep up the required pressure. Accordingly it was necessary to devise some method of relieving the pressure in the one case and adding to the vapor pressure in the other. This problem was solved by connecting a number of stills in such a manner that the extra gas from some made up for the shortage of others.

"It was also learned that a dephlegmating system was necessary, when operating at moderate pressures, to separate the light fractions and to return the heavier to the still. The first 6,000-gallon still was charged with 'fuel oil' ranging in boiling point from 200 to 350 degrees C. A 'substantial yield' of a product boiling from 50 degrees to 200 degrees C. was obtained. The loss averaged less than 3 per cent. The high-boiling residue from the still was similar to natural asphalt." And Dr. Burton further states, "Evidently we were doing artificially what Nature had done in ages gone by—viz., distilling petroleum under pressure."

During the experiments upon this larger still at times the problem of the deposition of carbon was considered almost unsolvable. The persistent efforts, however, of Dr. Burton and Dr. Humphreys and their assistants solved this problem by the introduction of movable plates in the stills which collected much of the carbon and prevented its deposition on the bottom of the still where it could cause a hot bottom. Several months were devoted to experiments with the 8x20-foot still. These were so successful that a large appropriation was given for the erection of 40 stills each of which could be charged with 8,000 gallons of raw material.

First Commercial Units

A great deal of doubt arose in the minds of many oil men as to the safety of these pressure stills, but in spite of the large number in use and the ever-present human equation, eight years elapsed before a fatal accident occurred. The first Burton stills built in 1913 were of about 250-bbl. gross capacity. The shell and ends were made of ½ to ⅝-inch mild steel plate, riveted and calked. The stills were provided with a safety valve draw-off line for the hot residue, with inclined vapor lines (that functioned also as a dephlegmator), with a condenser and a small round tank to act both as a trap and gas and liquid separator and with relief valves for gas and liquid.

The still was charged and heated to around 675 degrees Fahrenheit, whereupon cracking commenced and the pressure was built up to about 80 pounds per square inch by the gases evolved. Distillation proceeded over a period of 48 hours, in which time the temperature rose to 800 degrees Fahrenheit and 60 per cent of light distillate was collected. The residue from the still, which contained granular carbon and also probably highly carbonaceous substances in suspension, was charged into stills, where it was run to coke. The coke so formed was equivalent to 5 per cent of the oil charged in the coking still. The distillate from the coking still was found to have extremely low viscosity for its specific gravity and this product is the basis for another patent. This distillate was either re-run in the cracking stills or used for other purposes.

Improvements and Modifications

The greatest source of difficulty from the first was because of the fact that carbon was inclined to deposit on the still, causing the bottom to overheat and necessitating a shut-down. This was largely because of the poor circulation of the liquid in any simple still, and the solution of this difficulty, as before indicated, was accomplished and covered in patent granted to Dr. R. E. Humphreys.

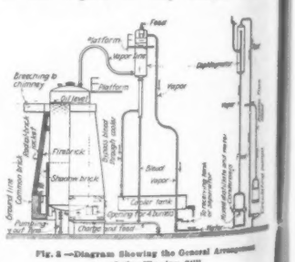

Fig. 2.—Diagram Showing the General Arrangement of the Fleming Still

Previous to the use of Dr. Humphreys' invention, which consisted of movable plates suspended from the side of the still upon which most of the carbon deposited, it was possible to distill out about one-third of the oil from the still before it was necessary to shut down. By using these so-called false-bottom plates, however, two-thirds of the oil could be distilled in the single operation.

Further improvements were made by E. M. Clark which involved manifolding of the condensers so as to allow for the

(Continued on Page 140)

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CHICAGO DISCUSSES STOCKS AND PRICES

Spot Demand Active but Distribution Not Large. Prices Firmly Held. Kerosene Dragging and Distillates Held Back by Mild Weather. Fuel Oil Advancing on Limitation of Supply. Tank Wagon Situation Unchanged

By John B. Waldo

CHICAGO, Dec. 8.—There is a lot of discussion regarding the present gasoline market and especially will the present market prices hold? Marginal contracts are drawn into the argument but only once in a while is there any mention of one fact that all refiners thinking back for a year and more must remember as most essential, the large stocks that were held by one of the largest independent refiners. Many meetings of the Western Petroleum Refiners' Association revolved to a great extent around the question of what might happen if those stocks were put on the market.

The Mid-Continent industry felt a good deal as a man might feel living in the near vicinity of a huge reservoir of whose strength and stability there was doubt. The waters might be held safely by the walls and he and his belongings would be safe, but there were reasons to fear the walls might give way at any time in which case that vicinity would not be a desirable place to have one's possessions. Time and again the sentiment was expressed that it was best to sell while the selling was possible. These stocks were visible, to be estimated, almost to be counted in barrels or gallons, 8,000,000 gallons of gasoline under the control of a one-man organization and anything might happen. The average small refiner simply did not dare to hold his stock at that time.

Things Are Different

Now things are different in the Mid-Continent Field so far as the information here goes. The understanding is there are no sizable stocks of gasoline anywhere in the field that are not owned by refiner-distributors who need the gasoline for their own sales or are sold well ahead to marketers or jobbers. This puts an entirely different aspect on the situation. There is no need to fear a deluge of gasoline at least for a while and even the chance of that depends on a dropping off in consumption combined with over-activity on the part of refiners. Probably neither one would do more than hold the market steady at near its present level. Both would result in declines. One of the older hands in the business had the thought that we might have snowstorms covering the territory and this would tie up the distribution for a month but this must be qualified.

It took a terrific spell of winter weather to absolutely dislocate distribution last February. There was deep snow and intense cold spell after cold spell with snows between. These events do not happen more often than once in a period five years but if they did come again this year the outlook is so different from last year that the feeling in the industry would be changed. Then the industry was optimistic; it is still so, but during the past 10 months it should have learned a lesson. If it did learn something and acts on the knowledge gained there will be no disappointments. If it has not, the industry will get another lesson, that is all there is to it.

The gasoline consumption during November held up very well. All agree as to that, large and small. Of course, it was not an August business but it was better than an average November. The new demands from more cars, more busses and trucks, flying machines and tractors swel'ed the old total by a considerable quantity. December has made a fairly good start and the outlook is there will be no serious interruptions to the use of the motor cars usually run at this season. So long as the refiners do not fill their tanks with gasoline for which there is no present demand anticipating the requirements of the consumers by from three to six months there will be no real trouble. There are going to be exports but these are not to be counted on. Run for the orders that are on the books and if the refiner cannot get orders what he wants is salesmen, not tanks of gasoline held unsold until he puts a bargain price on the commodity.

Spot Demand Active

The spot demand here from the jobber for distribution is not large. It might be called active for every one who orders in the spot market wants the gasoline promptly and usually wants a transit car. There has been a lot of contracting going on and there have been sales between refiners and marketers and some lots have been sold several times without any movement at the end. One hears all kinds of stories about what has been done in this way but as they really tell nothing most of them may be forgotten. The Cosden Sales Corp. was busy during the week buying back its own gasoline from contract customers and several lots were traded in, in some cases the price paid being 8⅜ cents. Refiners were asking marketers to sell them some of their own gasoline presumably because the refiner could sell to better advantage. In one case a marketer sold to a refiner who sold back the gasoline, high gravity, by the way, to the original refiner, at least that was the story told. This all makes for an active market and helps prices but the actual deliveries were not in proportion to the sales reported. The contract deliveries, especially on old contracts, were good, the jobbers taking their full allowance even if they did not really need the gasoline or, as it happened in several cases, the distillate. There are some very low prices in several of these distillate contracts.

Prices are firmly held. Refiner after refiner has given his view of the price situation but when asked what he was quoting would reply they were not quoting as they were all sold up, so it is really the marketer who is naming the price to a very great extent today. That price is at the close of the week 8¾ to 9 cents, the sales at the latter price being largely if not wholly of cars in transit or from some nearby source of supply that could promise quick delivery. The prices on the higher gravities are more unsettled but the advance on these has been greater than on the U. S. Motors grade. These are the gravities most difficult to buy because exporters are quietly or with as little noise as possible picking up supplies to replenish their tanks and be ready for the next batch of export orders. The natural gasoline market here is very strong and most sellers want to have their prices confirmed before entering the order if it is at all sizable. There is less hesitancy regarding blends but the demand seems to be growing although prices are high. The 56-58 gravity straight run is selling readily yet, some of it to be blended and some still salable during this weather. Late reports stated the Gulf and The Texas Co. were both in the market for U. S. Motor gasoline and paying 9 cents to Oklahoma refiners, having cleaned out the Shreveport and North Texas districts. Not confirmed here although the report was considered as very likely, but there were skeptics.

Kerosene Drags

Kerosene continues to drag and the trade is beginning to wonder what has become of the winter kerosene demand. December to February used to be good kerosene months but here they say the spring and summer are now better kerosene months than winter. Electric light has displaced kerosene and the tractor is displacing old Dobbin. The tractor is

(Continued on Page 144)

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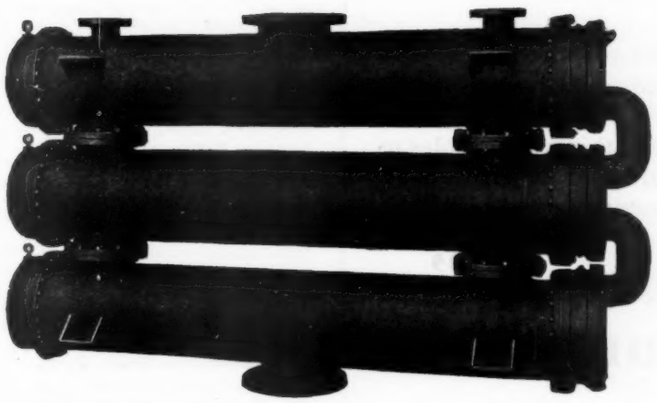

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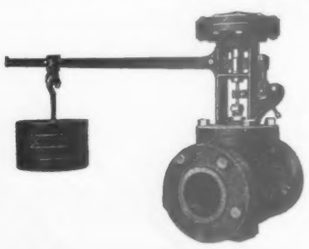

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41

EASTERN MARKET IS IMPROVING; ADVANCE IN EXPORT NAPHTHA PRICES

By N. O. Fanning

NEW YORK, Dec. 6.—The refined oil markets on the Atlantic Seaboard showed further strength during the past week. This was outwardly indicated by the advance in export naphtha prices, but underneath the surface in the domestic market the situation also registered improvement. Scattered offerings of tank car gasoline and kerosene at concessions are still being reported, but they are not extensive enough to affect the general price structure. The best sign is that the large companies are not now participating in that bitter competition which prevailed a month ago when the Gulf Refining Co. slashed the tank wagon price from 3 to 4 cents per gallon.

It is a matter of more than general knowledge here that some of the large companies made concessions of 1 to 2 cents per gallon under the tank wagon market in many instances during the period referred to, but these have all been withdrawn, according to the best information available. The present tankwagon market is a real one in the sense that the tankwagon prices are being adhered to.

Consumption Breaks Record

Consumption of gasoline in the East has broken all records for late fall and early winter, due to the record fine weather, something which could not have been foreseen and which has done the oil business particular good on that account. As a result, refiners on the Atlantic Seaboard find themselves faced with the need for increasing production of gasoline beyond their previous schedules, in order to prepare for next year, at the same time taking care of current requirements.

The demand for light crude on the part of eastern refiners is unusually large, and new contracts are being made in the Mid-Continent Field, according to reports. Tide Water Oil is reported to have closed a contract with Prairie Oil & Gas to replace California oil for 1925.

Tangible evidence of the turn for the better in the crude situation (a direct result of the improvement in gasoline on the Atlantic Seaboard) is contained in the fact that receipts of oil from the Gulf Coast increased during the past week to 299,000 bbls. daily, against 253,000 bbls. the preceding week, while, in contrast, receipts of crude from California were the smallest in more than a year, averaging only 50,000 bbls. daily. The latter figure is on top of an average of only 55,000 bbls. daily the week before.

California Fading

That California is fading gradually out of the eastern picture is indicated by the decline in shipments and statements of oil refiners here that in all probability contracts for California oil would not be renewed for 1925, due to higher prices asked by Pacific Coast producers, and the comparatively low price of Mid-Continent crude.

Therefore next year should see eastern refiners dependent upon the Mid-Continent for the bulk of its high grade oil. No doubt they will not wait long to make contracts for their 1925 requirements, although in many cases these refiners have a large stock of high grade crude of their own in tanks of their subsidiaries in the Mid-Continent Field.

Intensive development in Mexico under the Calles regime will probably enable that country to supply a larger proportion of heavy oil than during 1924, so that is being counted on to replace California heavy oil which is now being purchased by eastern companies.

The chief problem next year, from the crude oil viewpoint, is expected to be light oil suitable for gasoline and lubricating oil production, especially the latter, as "cracking" will help the gasoline situation.

Reports are that Vacuum Oil, one of the largest producers of lubricating oil in the world, is planning to absorb some producing units in the Mid-Continent Field, and is making contracts with others to assure itself of a good 1925 supply of high grade oil.

Kerosene Unchanged

Little attention has been paid to the kerosene market during the past few weeks. Consumption is about even, and although prices are soft, no changes have been recorded. Exports are improving, although the volume handled from eastern ports is still below normal.

Fuel Oil Firm

Bunker fuel oil is firm, all factors now quoting $1.80 per barrel at New York (lighterage 6½ cents per barrel extra). It is possible, or perhaps probable, the price will be advanced in the near future to as high as $2, although fuel oil marketers are not anxious to see prices go too high. Light Mexican oil is scarce, and the difficulty in obtaining heavy crude at present prices may force a further advance in fuel oil.

Lubricating Oil Steady

The lubricating oil market has remained unusually quiet during the past week, with demand about the same. No price changes have been recorded.

Exports Large

The export market is still very strong, with lubricating oil the feature. Barrel shipments of this product during the past week were particularly large, totaling 1,391,082 gallons.

Bulk exports of oil were small, only one cargo being reported. That consisted of 2,402,422 gallons of gas oil consigned to the Anglo-American Oil Co. in England.

Paraffin wax shipments held up well, consisting of 828,300 pounds shipped in bags and 2,356 bbls. in barrels.

Charter Market Active

The tanker chartering market was active during the past week. New fixtures include:

Steamer Aral (Br.), 2,112 tons net, December loading, refined oil, United States Gulf port to Antwerp, at 38s. 9d.

Tanker Trimountain (Am.), 4,068 tons net, fuel oil, late December loading, Gulf port to the United Kingdom, at 24s.

Steamer Vampa (It.) 2,423 tons net, refined oil, January loading, Philadelphia to Rouen 32s. 3d.

Tanker Rates Higher

Charter rates for tankers have registered an abrupt advance during the last week, amounting to 15 cents or more. One tanker was chartered for Gulf to north of Hatteras for 47 cents, against as low as 27 cents a month ago.

The trend is toward even higher levels next year, according to shipping agents.

Principal Exports

The following table shows principal exports of petroleum and petroleum products from New York during the past three weeks: (Figures in gallons unless otherwise noted):

	Week Ended		
Gasoline:	Dec. 3	Nov. 26	Nov. 19
Bulk	.....	1,175,942	2,117,961
Cases	1,533,400	496,760	1,031,610
Kerosene:			
Bulk	.....	1,541,769	1,604,475
Cases	2,156,720	741,200	4,302,480
Gas oil:			
Bulk	2,402,422	.....	.....
Lubricating oil:			
Bulk	.....	773,940	.....
Barrels	1,391,082	789,768	1,146,471
Cases	134,770	.....	177,000
Lub. greases:			
Barrels	1,625	.....	637
Paraffin wax:			
Bags, lbs.	828,300	1,753,620	1,677,520
Barrels	2,356	653	3,000
Pet. asphalt:			
Barrels	.....	.....	6,000
Crude oil:			
Barrels	430	2,498	6,000

Negotiations are in progress, it is understood, for a contract between the Standard Oil Co. of New Jersey and the member companies of the Rive Plate and Brazil conferences for interchangeable shipments of lubricating oils, wax and greases from United States ports to South America. Closing of the contract has been delayed by reason of the fact that the rate quoted on lubricating oils is $8 per ton, as against only $6 last year.

Signing of this contract is expected to have a helpful effect on the rate situation in the Brazil and River Plate

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3 Air cooled Stuffing Box—4 Bolt gland.
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5 Freely operating plug.

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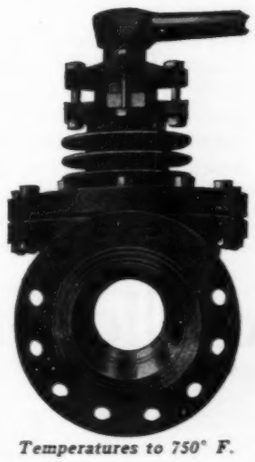
Write for more information regarding results being given in actual service. 4" and 6" valves available for trial.



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Export Representatives: U. S. Steel Products Company, New York City

Pacific Coast Representatives: U. S. Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

trades, which has been weakened during the past year by rate cutting. The contract is similar to that which was recently arranged for the handling of the same products by the transatlantic lines.

Oil Receipts Gain

Receipts of crude and refined oil at Atlantic ports during the week ended December 3 are estimated at 476,000 bbls. daily, against 406,000 bbls. daily the week before. The gain is accounted for by large receipts from the Gulf Coast, offsetting lower receipts from California.

November receipts are estimated at 476,000 bbls. daily, consisting of 246,000 bbls. daily from the Gulf, 80,000 bbls. daily from California and 150,000 bbls. daily from Mexico and other foreign countries. Imports were the largest in more than a year, due largely to higher shipments of Panuco crude.

November receipts of 476,000 bbls. from all sources compare with 437,000 bbls. daily during November, 1923. Detailed comparison of November, 1924, shipments with those of October, 1924, and November, 1923, follows:

From—	Nov., 1924	Oct., 1924	Nov., 1923
Gulf Coast	246,000	246,000	186,000
Pacific Coast	80,000	120,000	141,000
Imports	150,000	88,000	110,000
Total	476,000	454,000	437,000

Imports from countries other than Mexico during November, 1924, amounted to 257,000 bbls., an average of 9,000 bbls. daily.

Average Receipts

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic ports from Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for last 13 months (figures in barrels):

	Week Ended— Dec. 3	Nov. 26	Nov. 19
Gulf Coast	299,000	253,000	216,000
Pacific Coast	50,000	55,000	113,000
Imports	127,000	98,000	107,000
Total	476,000	406,000	436,000

Daily Averages by Months

	Gulf	Pacific	Imports	Total
Nov., 1924	246,000	80,000	150,000	476,000
October	246,000	120,000	68,000	454,000
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,900	521,000
July	318,000	85,000	114,000	517,000
June	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	456,000
January	127,000	159,000	79,000	365,000
Dec., 1923	184,000	153,000	119,000	456,000
November	186,000	141,000	110,000	437,000

Imports are large from Mexico, with an occasional cargo from Peru, Venezuela and Trinidad.

PLACE OF FURNACE OIL IN THE INDUSTRY

(Continued from Page 104)

producing a lighter product such as unfinished kerosene would make little difference in realization, provided, of course, the price obtainable for furnace oil is at least as high as for light gas oil. The tendency in refining processes is very strong along the lines of more improved fractionation, which means closer stripping.

Kerosene of Future

"It seems likely the kerosene of the future will be closer cut, containing less gasoline, the initial boiling point will be higher and in order to maintain a kerosene of good burning qualities the final boiling point will have to be lower and a smaller yield will be obtained. This would leave a larger yield of light gas oil completely stripped of the lighter fractions. Furnace oils requiring a low flash with a relatively large percentage of heavy naphtha such as some of the vaporizing types of burners must use, will, with normal gasoline markets, command a higher price and will be more limited in supply. A refiner wishing to market only one grade of furnace oil suitable for all the present types of burners must supply this type of furnace oil which would come under Class 1 previously described and which tdoay comprises about 50 per cent of all the furnace oil burned.

Perhaps the refiner will help meet the demand for furnace oil by supplying cracking stock in the winter during the period of lessened gasoline consumption and putting this through his cracking stills in the summer when furnace oil is not needed but the demand for gasoline is greatest. A possible drawback would be the materially increased costs in shutting down and starting up the pressure stills as to operate a process like pressure stilling economically it should be uninterrupted. The question might also be raised as to how much of the cracking stock thus made available would have a suitable cold test.

Certainly from the refiner's standpoint if he is to do his share in furnishing an adequate supply of furnace oil at the lowest price, it is desirable oil burners should be capable of using the widest possible range of products.

CANADIAN FIELDS

(Continued from Page 47)

though it is probable that the E. P. Rowe deep test north of Thamesville, in Zone Township, Kent County, will be carried through the Trenton. This test is at present reported shut down at about 2,400 feet. The Trenton formation in this area has never been definitely tested. A noteworthy feature of Trenton limestone tests throughout western Ontario is that even in holes ultimately abandoned as dry, traces of oil and gas are usually encountered. Definite commercial production in this formation has been discovered in four different areas, long distances apart; near Point Abino, in Bertie Township, Welland County, where a commercial gas production was reported some years ago in a single deep test; in the Dover Field, Kent County, where a small field was developed near the mouth of the River Thames; at Hepworth in Bruce County, where several producing gas wells have been drilled and are supplying a limited number of customers and in Manitoulin Island, where good oil showings have several times been encountered, though, owing apparently to lack of a suitable covering formation, the production fails to hold up. The Trenton limestone is apparently at its deepest in a certain section of Kent and Lambton County, rising toward the east and north, and also rising toward the west and south, being considerably higher in Essex County than in Kent.

Shallow Drilling

A little shallow drilling is being done in western Ontario. In Onondaga Township, Brant County, the Canadian Dutch Oil Co. is reported to have secured a small production, about 3 to 5 bbls. a day, in a shallow pumper drilled to around 800 feet. A second test is being drilled. In Elgin County, following the drilling of the Peace River Oil Development Co.'s spectacular but short-lived discovery well earlier in the year, two other small producers, reported to be making around 3 bbls. a day, have been drilled. Production is secured in the Onandaga limestone at about 330 feet and the latter wells are believed to be holding up better than the first one. At Tillsonburg, in Oxford County, the Caledon Oil & Gas Co.'s test is shut down at 400 feet.

ENLARGING WATCHORN PLANT

The Watchorn Oil & Gas Co. is increasing the capacity of its natural gasoline plant located in Watchorn Field of Oklahoma. Four new units are being installed, making a total of seven at the plant.

EAST CENTRAL TEXAS

(Continued from Page 48)

Marland Oil Co. meanwhile will test out other acreage it owns in the field.

A roundup of field conditions made today shows 45 wells drilling and 125 derricks up. The acreage east of the town of Wortham is being given a big play in anticipation of the success of Bob Penn and his associates in their test on the McCorkle farm.

The combined capacity of the pipe lines to be extended into the Wortham Field will be 160,000 bbls. a day, which is expected to be sufficient to handle all the oil the field will produce.

New Work Started

The Boyd Oil Co. has derricks up for five wells on the Roy Simmons [illegible] Longbotham survey, on which [illegible]

bbl. initial producer was completed. J. K. Hughes will drill on the Crouch farm, and is drilling at 1,600 feet on the Bounds farm and has derricks up or building for four wells on the Simmons farm. The Humble Oil & Refining Co. has started drilling on the Crouch farm and has derrick up for No. 2 Crouch.

The Kirby Petroleum Co. was drilling today at 2,700 feet in its No. 1 L. Bounds, Longbotham survey.

The Marland Oil Co., which owns a 16-acre lease on the Roy Simmons land, offsetting the Boyd Oil Co.'s Simmons lease, has derricks up for four wells on one lease and has made four locations on the 6-acre lease. The Pure Oil Co. will drill on the Crouch farm and has made plans for four wells on the Bounds farm. The Rio Bravo Oil Co. has a derrick up and two locations made on the Southern Pacific Railroad right-of-way. The Rio Bravo company is owned by the Southern Pacific Railroad. The Simms Oil Co. will test out the Colome farm, E. L. Smith and others are below 2,200 feet on the Beal farm. Farrish, Watson & Collins are drilling at 1,300 feet on the Jackson farm, and have a derrick up on a Wortham townsite lease, and have started drilling No. 1 McCorkle. Hapgood and others have derrick up for a test on Block 78, Wortham townsite and for No. 1 on the Redys farm. The Simms Oil Co. has derrick up for No. 1 Colome and No. 1 Purifoy. The Humble will drill a test on the Poindexter farm and the Kirby Petroleum Co. two wells on the Chancellor and one on the Wright addition. The derrick is up for E. L. Smith's No. 1 Edwards.

Carter & Lytell in their No. 1 Manning on the McAnulty survey, set 8¼-inch casing at 1,104 feet. The well blew in for 20,000,000 feet of gas at between make salt water. The work of mudding 1,104 and 1,481 feet and then started to off the gas preparatory to drilling deeper was started. The same company is drilling No. 1 Manning. The Boyd Oil Co. is drilling No. 1 J. Manning below 1,600 feet and was rigged up on No. 2 Manning, and had a derrick up for No. 1 Smith, all the McAnulty survey. The Godley Oil Co. will drill two wells on the Mrs. J. Manning farm and the Gulf Production Co. will test out the Lindley farm. The Humble Oil & Refining Co. was ready to start No. 1 Ferguson and No. 1-A Lindley. Dale Shaffer was drilling below 1,400 feet in No. 1 Mrs. J. Manning.

Over the line in Limestone County, and all on the McAnulty survey the Boyd Oil Co. located No. 2 on the Boyd farm, on which its discovery well came in and will start three wells on the Ferguson farm; The Godley Oil Co. will drill one on the Ferguson and the Gulf Production Co. will start Nos. 1 and 2 on the same farm. The Humble Oil & Refining Co. made locations for two on the Finch farm and the Magnolia Petroleum Co. for six wells on its big Boyd tract.

In Navarro County

In Navarro County Cranfill & Reynolds abandoned their No. 1 Irvine on the Broyles survey at 1,848 feet. In the Richland Field, Navarro County, McIntyre and others have abandoned No. 1 Mrs. Richards at 3,605 feet. No new work was reported in Navarro County in the past week.

NORTH CENTRAL TEXAS

(Continued from Page 46)

Holmes and others' No. 2 Morse, gas showing at 2,375 feet.

Wheeler County—Whittington and others' No. 2 Williams & Laycock, gas showing at 1,980 feet.

Wilbarger County—Barkley and others' No. 1 Stephens, drilling at 900 feet; Bridwell and others' No. 3 Stephens, drilling at 2,005 feet; same company's No. 5 Stephens, drilling at 1,500 feet; Dill Farm Oil Co.'s No. 1 Dill, drilling water sand at 2,260 feet; Hamilton and others' No. 1 Kester, drilling at 1,250 feet; Hart and others' No. 1 Smith, hole full of water at 2,115 feet; Humel Oil & Refining Co.'s No. 1 C. Castlebury, drilling at 400 feet; Levy and others' No. 1 Wheeler, drilling at 550 feet; Little Oil Co.'s No. 1 Youngblood, drilling at 700 feet; Magnolia Petroleum Co.'s No. 46 Sumner, drilling at 635 feet; McCamey and others' No. 1 Stephens, drilling at 1,380 feet; Petroleum Producers Co.'s No. 2 Dill, testing sand at 1,915 feet; Ray and others' No. 2 Bond, drilling at 900 feet; same company's No. 3 Bond, drilling at 900 feet; South Vernon Oil Co.'s No. 4 Stephens, drilling at 1,880 feet; Staley and others' No. 1 Waggoner, drilling at 750 feet; Waggoner and others' No. 1 Bond, drilling at 1,300 feet; Winnipeg Oil Co.'s No. 4 Bond, drilling at 800 feet.

Baylor County—Lahman anad others' No. 1 Shawver, fishing at 800 feet; Nelson and others' No. 1 Sykora, drilling at 1,400 feet.

Clay County—Evans and others' No. 1 Culver, drilling at 850 feet; Sullivan and others' No. 1 Scott & Ramsdell, coring sand at 1,200 feet; Somers and others' No. 1 Parker, drilling at 1,200 feet.

Throckmorton County—Clark and others' No. 1 McCarson, drilling at 690 feet; Hamilton and others' No. 1 Odell, drilling at 2,320 feet; The Texas Co.'s No. 1 Smythe, drilling at 410 feet; McNeil and others' No. 1 Davis, drilling at 640 feet.

Shackelford County—Humble Oil & Refining Co.'s No. 1 Green, drilling at 1,950 feet; Magnolia Petroleum Co.'s No. 4 George, drilling in lime at 3,050 feet.

Palo Pinto County—Britton and others' No. 3 Strawn Coal Co., drilling at 750 feet; Cameron and others' No. 2 Pollard, drilling at 320 feet; Moore and others' No. 1 Stuart, drilling at 200 feet; Pender Production Co.'s No. 2 Slemmons, drilling in lime at 3,030 feet; Wickens and others' No. 1 Williams, drilling at 940 feet.

Mitchell County—Eddleman and others' No. 1 Gist, fishing at 2,880 feet; California Co.'s No. 1 Clark, drilling at 2,615 feet; same company's No. 5 Miller, drilling at 2,740 feet; same company's No. 7 Abrams, fishing at 2,985 feet; Sloan and others' No. 3 Miller, drilling at 1,000 feet.

Reagan County—Arkansas Fuel Oil Co.'s No. 1 University, reaming; Big Lake Oil Co.'s No. 14 University, drilling at 2,700 feet; same company's No. 15 University, setting casing at 2,825 feet; California Co.'s No. 1 University, drilling at 1,225 feet; Texon Oil & Land Co.'s No. 1 group 2, drilling at 3,850 feet; same company's No. 3 group 1, drilling at 2,005 feet; Transcontinental Oil Co.'s No. 1 University, drilling at 2,625 feet; University Oil Co.'s No. 1 University, drilling at 1,700 feet.

MEXICAN FIELDS

(Continued from Page 46)

146 cemented 8-inch in the San Felipe at 1,200 and 1,170 feet respectively. In Lot 4 No. 143 cemented 8-inch in a shell at 1,060 feet. International Petroleum Co.'s operation in Lot 5 follow: No. 34 is drilling in shells at 1,125 feet; No. 65 cemented 8-inch in the San Felipe at 1,204 feet; No. 103 cemented 10-inch in the same formation at 1,202 feet; No. 104 drilling in the San Felipe with a showing of oil at 1,350 feet; No. 117, drilling in gray shale at 430 feet; No. 121, drilling in gray shale at 1,707 feet, having flowed a head of oil at 1,695 feet; No. 122, drilling in gray lime at 1,740 feet; No. 123, in the San Felipe at 1,470 feet; No. 124, in gray shale at 311 feet; No. 127, in gray shale at 180 feet; and in Lot. 4 No. 132 cemented 8-inch at 1,201 feet in the San Felipe. Mexican Sinclair Petroleum Corp.'s No. 75, Lot 2 cemented 8-inch in the San Felipe at 1,235 feet; and No. 66, Lot 3 is drilling in blue shale at 195 feet. Mexican Petroleum Co.'s No. 19, Lot 1 Cacalilao is drilling in lime at 1,620 feet. Transcontinental Petroleum Co.'s operations in Lot 4: No. 110 cemented 10-inch in the San Felipe at 1,300 feet; No. 125, drilling in lime at 2,065 feet; No. 135, cemented 10-inch at 1,300 feet in the San Felipe; No. 137, drilling in shale at 450 feet; No. 139, in the San Felipe at 1,380 feet; No. 142, in shale at 490 feet; No. 143, fishing in shale at 600 feet; No. 146, in shale at 500 feet; and in Lot 5, No. 127, fishing in lime with hole full of oil at 2,040 feet; No. 133, drilling in the San Felipe at 1,625

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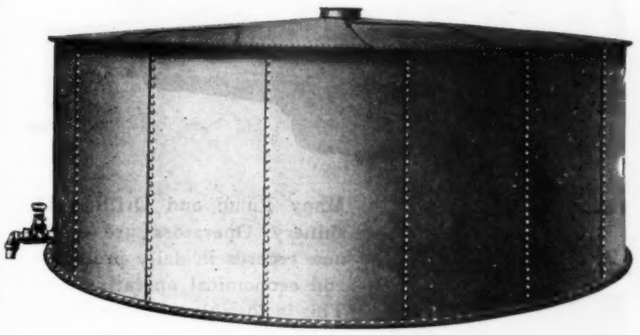

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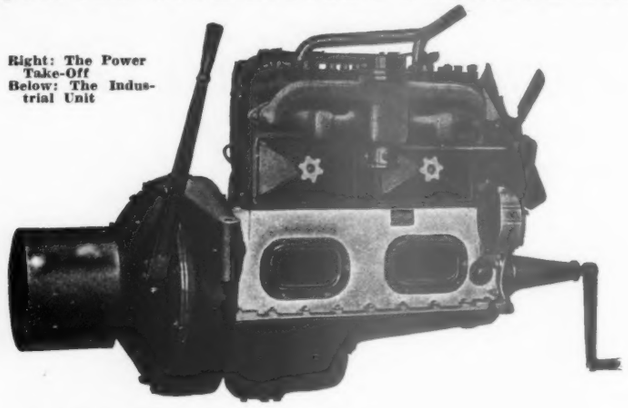

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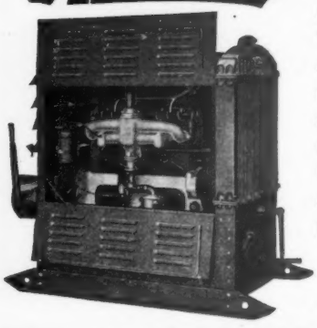

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feet; No. 136, drilling in shale at 150 feet. In the Paciencia, just north of Cacalilao, Transcontinental's No. 5 is preparing to cement 10-inch in shell at 1,250 feet; No. 12, running 10-inch at 1,200 feet in same formation, and No. 14 cemented same size casing in the same formation at 1,260 feet.

Panuco

In the older Panuco sectors drilling operations are: Credito Petrolero's No. 1, Lot 13, Lomas y Llanos, drilling in the San Felipe at 2,040 feet; No. 4, Lot 15, in shale at 1,240 feet, and No. 1, Lot 11 Tamante, drilling in hard gray lime at 2,060 feet. La Corona Petroleum Co.'s No. 82 San Manuel, drilling in the Tamasopa at 2,292 feet. East Coast Oil Co.'s No. 439 Ingenio cemented 8-inch in lime shells at 1,250 feet. National Oil Co.'s No. 12 Chijoles, drilling in gray lime at 1,800 feet; Sol Oil Co.'s (Federal zone) No. 1 Alamo, drilling around 1,700 feet in gray lime. The Texas Co.'s No. 18, Lot 15 Lomas y Llanos, cemented 8-inch in the San Felipe at 1,584 feet.

Ebano

At Ebano, Mexican Petroleum Co.'s operations follow: No. 29 Chijol drilling in lime at 1,835 feet; No. 39 La Dicha cemented 8-inch in same formation at 1,260 feet; No. 44-A in lime at 1,520 feet; No. 44-B cemented 8-inch in white lime at 1,205 feet; No. 49, the same at 1,235 feet. In its Chapacao, Mexican Petroleum's No. 1 is drilling in the Tamasopa at 2,210 feet; No. 3 in lime at 2,190 feet; No. 5 fishing a bit at 2,170 feet; No. 6 in shale at 420 feet. In its Tancasneque, north of the Tamesi River, No. 1 is drilling in the Tamasopa at 3,155 feet; and on the southern boundary of the company's holdings, No. 5 Margaritas is drilling in lime with hole full of oil at 1,760 feet. Over by the Corcovado border, No. 1 San Pedro is ready to spud.

Miscellaneous Tests

In Los Esteros, American International Fuel Co.'s No. 16 is drilling in gray lime at 675 feet.

In Corcovado, La Corona Petroleum Co.'s No. 3, Lot 6, cemented 8-inch in the San Felipe at 1,180 feet, and moving in for No., 2 same lot. Mexican Gulf Oil Co.'s No. 2, Lot C, is drilling in shale at 615 feet, and No. 3, same lot, drilling in a broken limestone at 1,184 feet. Tamasopa Oil Co.'s No. 2, Lot C, will cement 8-inch in gray lime at 1,585 feet. There is no particular change in other Corcovado tests.

In the Topila district (and somewhat south of it), La Corona Petroleum Co.'s No. 4 Los Cues cemented 6-inch in gray shale at 1,200 feet, diamond drill test. Cortez Oil Corp.'s No. 1 Cahuayotes is drilling in the Papagallos shales at 2,100 feet. East Coast Oil Co.'s No. 509, Lot 29 Tamboyoche, is drilling in gray shale with traces of lime shells at 1,950 feet. Mexican Fuel Co.'s No. 15 Santa Fe is drilling in gray lime at 1,950 feet, and No. 16 spudding.

At El Barco, Kern Mex. Oil Fields Ltd.'s No. 6 is showing about 75 bbls. at 2,350 feet, in the gray limestone, which encourages the company to send the drill deeper. It has a derrick up for No. 15 Las Palmas. Mexican Gulf Oil Co.'s No. 23 El Barco is drilling in brown and gray lime at 1,540 feet; No. 25 set surface casing at 163 feet.

National Lines, drilling in its Chapacao right-of-way, is 2,000 feet in the Tamasopa with No. 2; and rigging for No. 5.

In the Marland Field, Cia. Petrolera Franco Espanola, No. 15 Limon, drilling 2,308 feet in limestone.

There is nothing particularly new in the status of the tests in the Tortuga sector.

Observations

Huasteca Petroleum Co. (Mexican Petroleum), is laying its second 10-inch line from Ebano to its ocean loading terminals at Tampico. The completion of this line should give the company a capacity of 50,000 bbls. a day from the field, easy pumping in all weathers.

The Texas Co.'s No. 8 Cicero, recently finished in this old sector of the Panuco Field at 2,202 feet, rate 600 bbls., did not last under exploitation and has been shut in.

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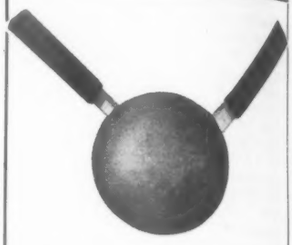

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Zapata County	1.25 an acre
Bexar County	3.00 an acre
Hays County	.30 an acre
Sterling County	1.00 an acre
Coke County	1.00 an acre
Irion County	1.50 an acre
Bandera County	.40 an acre
Wilson County	3.00 an acre
Comal County	.35 an acre
Travis County	.35 an acre
Terrell County	.75 an acre
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LEASES—PRODUCTION

FOR SALE

A 15-acre producing lease at High Island, Texas. One well came in at 250 bbls., now producing about 10 bbls. Grade "A" Coastal; depth 149 feet.

Equipment consists of two derricks, one gasoline rotary rig, completed; 1½ miles pipe line to loading rack; three pumping engines, casing and tubing; 8,000 bbls. of new Parkersburg steel storage tanks; 1,300 bbls. of crude in tanks goes with lease. Price on application.

CARTER AUTOMOBILE CO.
2322 P. O. St. Phone 1240
Galveston, Texas

FOR PANHANDLE oil leases and drilling contracts write Dr. W. R. German, Canadian, Tex.

J. F. MARION COMPANY
Magnolia Building
Dallas, Texas
Buys and Sells
Texas and Oklahoma
Producing Royalties
"Ask Us First"

---

200 ACRES near Prairie Company's new Wilcox sand well, Montgomery County, Kansas, Section 31, Township 32, Range 15. Prairie Company's well is on Section 21. This 200 acres has three Bartlesville Sand wells pumping, fully equipped and on line. Will sell outright or sublease for Wilcox test. P. H. Ball, Box 251, Independence, Kans.

"Buy Christmas Seals"

DRILLING BLOCKS my specialty; wells drilling nearby. F. E. Waldrop, Nashville, Ark.

FOR SALE—Lease on 80 acres in proven field. Box A-524, The Oil and Gas Journal, Tulsa, Okla.

FOR LEASE, 205-acre farm, oil and gas land on Beaver Creek, 5 miles west of Glasgow and less than 1 mile of railroad station. Farm being north of the Emery Noose Pool and joining the Taylor-Bishop farm, where the best wells are coming in. Price $25 per acre. David Samson, Box 401, Glasgow, Ky.

NORTH TEXAS

Shallow field leases, including offsets, at low prices. Offsets to producing leases in Archer County have sold as high as $900 cash per acre. Chance for excellent profits. Write for maps and prices. P. R. MacIntosh, 215 Neil P. Anderson Bldg., Fort Worth, Tex.

IF YOU ARE interested in prospective Colorado oil land east of Florence and northwest Pueblo, write L. E. Ehrenfeld, Hillside, Ariz.

WESTERN KANSAS—Will trade acreage for use of casing and for trucks, 6-inch Ideal irons, tools, tanks and other equipment, also for acreage favorably situated near other drilling wells. Our wells on structure which will stand exacting check. Contract depth on all five wells 3,500 feet. Box A-490, The Oil and Gas Journal, Tulsa, Okla.

WE CAN DELIVER several large blocks of acreage on drilling contracts; also seveal blocks for nominal cash consideration; all favorably located in Kansas with excellent possibilities for oil. Box A-520, The Oil and Gas Journal, Tulsa, Okla.

Does the Petroleum Industry know the name and address of your organization?

Are your catalogs, booklets, stock lists, etc. properly placed in the oil business?

If the answer to each of the above questions is "No," the Classified Wants Section will help you to make it "Yes" in a very few weeks.

LEASES—PRODUCTION

ROYALTY
"Buy from the owner"

Owner will sell one-half perpetual royalty on lands located in active territory, between two drilling wells. Twenty acres or more price $2.50 per acre. Terms if desired. Address "Owner," P. O. Box 1036, Fort Worth, Texas.

LEASES and drilling contracts proven and semiproven; 40 acres to 10,000 acres; Hutchinson County, Texas.

R. P. O'GRADY
Suite 2 Old Post Office Bldg.
Amarillo, Texas

SALESMEN

I own one-half perpetual royalty covering large block of lands near drilling operations. Will sell this property in small tracts, on easy payments, at very attractive price, and pay you a liberal commission. Write me for details. Owner, Box 283, San Antonio, Tex.

OIL LEASES—Possible new field; now drilling; gas a certainty; leases priced to do business. W. H. Breuer, Witter, Ark.

"Buy Christmas Seals"

COMANCHE DOME LEASES in Chaves County, New Mexico; splendid geology; two wells now drilling; big profits if you buy before they come in; attractive proposition for lease salesmen and promoters. Can offer large block to responsible driller for well if prepared to start operations without delay. J. P. Alexander, 4220 King St., Denver, Colo.

10,000 ACRES free leases, famous Scuna Valley Basin, Mississippi, for core drilled well. $20,000 required guarantee drilling; best geology. W. C. Brooks, Memphis, Tenn.

FOR SALE in the Kentucky oil fields 45 bbls. settled production; lots of room on lease for additional development. Address W. P. Harley, Bowling Green, Kentucky.

OIL LEASE for sale on structure in the principal districts of the new Colorado oil fields. Central Oil Co., Security Bldg., St. Louis, Mo.

FOR SALE—One-half of one-eighth royalty on 80 acres; near production. Box A-525, The Oil and Gas Journal, Tulsa, Okla.

TEXAS PANHANDLE leases for sale in Block Y, Hutchinson County. Practically proven. H. T. Orcutt, 816 Colcord Bldg., Oklahoma City, Okla.

FOR SALE—Leases, 5 acres up, near paraffin well; $10 per acre. Clarence Hall, Decherd, Tenn.

ANOTHER BIG WELL IN COLORADO

A small investment at this time in a lease properly located will make big money for you. I have leases on approved geological structure for sale cheap. Write at once for information. Geologist, 824 West Abirendo Ave., Pueblo, Colo.

ANSWER the biggest Classified Advertisement ever written.

"For Sale—Christmas Seals"

WELL PLEASED

One of the advertisers in the Classified Wants Section writes as follows: "I have just arrived home. I am well pleased with results. I have inquiries from Tulsa, Enid, Oklahoma City, Dallas, Fort Worth, Los Angeles, Altoona, New York City, Pittsburgh, Geer, Va., Mobile, and many other places. I will mail another ad about December 15."

FOR TRADE

FOR TRADE

Good Oklahoma farm, half mile from production to trade for standard string of tools and casing for 3,500-foot test. Address Box D. D., The Oil and Gas Journal, Tulsa, Okla.

FOR TRADE

TRADE—Improved 40 acres southern Oklahoma for good Star machine No. 22 to 28. Box A-523, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—EQUIPMENT

FOR SALE—No. 24 Star steam traction drilling machine; fully equipped for 1,200-foot drilling; A-1 condition; bargain. Must be sold. W. W. Wampler, Webb City, Mo.

PIPE FOR SALE

We offer the following used gas line pipe for sale:

3 miles 3-inch
15 miles 6-inch
10 miles 8-inch
32 miles 10-inch
7 miles 12-inch
5 miles 14-inch

Write us for prices.

BAUR GAS CO.
Eaton, Indiana

PIPE

All Sizes, Rethreaded, Coupled, Ready for Use; Immediate Delivery
Absolutely Guaranteed
D. WOLFF & SONS
2213-23 So. Fourth St. St. Louis Mo.

CASING

A-1 second-hand; threads and collars guaranteed. 5,000 ft. 12½ inch 50 lb. and 5,000 ft. 10 inch 35 and 40 lb. Also other sizes and weights. Write us.

SHEFTS SUPPLY
Morris, Okla.

BESSEMER Gas Engines, 15- to 165-h.p., other makes 300-h.p. Oil and gas and steam engines, compressors, generators, complete gasoline plants. R. W. Russell, St. Marys, W. Va.

"Buy Christmas Seals"

FOR SALE—At Yale, Tanks, Boilers, Stills, Loading Rack and Land at junk prices. Write P. O. Box 747, Yale, Okla.

FOR SALE—Complete standard string tools from 15½ in. down to 6⅝ in. Address J. G. Hunt, 1217 Johnstone Ave., Bartlesville, Okla.

Watch This Space From Time to Time for Real Bargains
PLAIN END PIPE
FOR GAS LINES

We have available for immediate shipment. 80,000 feet 4-inch; 30,000 feet 5½-inch; 30,000 feet 6-inch; and 25,000 feet 6½-inch Odee plain end pipe, first class material, thoroughly reconditioned, with plain ends ready for welding in the field. This material is furnished in double joints, which will enable you to cut your installation cost in half. The price of the pipe will likewise cut your cost about in half.

JOS. GREENSPON'S SONS
IRON & STEEL CO.
Department O St. Louis, Mo.

A BARGAIN—Practically new 10-ton Holt Caterpillar and three Troy Trailers all in A-1 condition. Address Box 82, Morris, Okla.

FROM NOW ON, When I want to do business with the real men of the petroleum industry, I'm going to put my advertisement right here in this Classified Wants Section.

AT A BARGAIN PRICE—2,400 feet of 6⅝-inch well casing, 27 lbs. per foot; 120 feet 8⅝-inch well casing; 60 feet of 12¾-inch, and 2,200 feet of tubing and rods; 100-bbl. tank; 600 feet of line pipe. Woking barrel, casing head, standard derrick complete. Will price f.o.b. car, Liberty Center, Ohio. Write C. R. Ulrich Co., 736 Nicholas Building, Toledo, Ohio.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

For Sale
OIL ENGINE UNIT
One 150-KW Fort Wayne compound wound direct current generator, 250-volt, 600 amperes, 164 R. P. M., direct connected to.
One 225-h.p. Busch Sulzer Diesel vertical oil engine, 3-cylinder, size 16-inch by 24-inch.
THE NATIONAL POWER MACHINERY CO.
1911 Scranton Road Cleveland, Ohio.

FOR SALE — High-powered stump puller. Box 107, Chickasha, Okla.

FOR SALE

5-inch extra heavy
new steel pipe
(National Tube make)
at very attractive prices
Box C. N., The Oil
and Gas Journal, 30
Church St., Room 547
New York City, N. Y.

FOR SALE
20 miles of second-hand 6-inch line pipe as good as new. Good threads and couplings. For further particulars address
OHIO IRON & SUPPLY CO.
Lima, Ohio.

FOR SALE
Two 32-h.p. Pattin Brother gas engines, complete with magneto ignition; can be seen running close to Tulsa; $700 each.
One 7-12x13x10 cross compound Worthington expander with Laidlaw valve. New condition, cost $3,550, f.o.b. factory, will take $1,500.
Two 60-h.p. Bessemer gas engines, $350 each.
Two 70-h.p. Bessemer gas engines, $350 each.
SOUTHLAND GASOLINE CO.
Box 1027 Telephone 9227
Tulsa, Okla.

FOR SALE—Twenty 500-bbl. steel bolted tanks, second-hand, but all in excellent condition. Will sell all or any part of these tanks for $250 each. Tanks now located in northwest fiield, Burkburnett. W. F. Hendren, 521 Staley Bldg., Phone 5900, Wichita Falls, Texas.

FOR SALE—complete string of oil well drilling tools and 5-inch Parkersburg rig irons. Bits from 18-inch down to 4¼-inch. Everything first class. Arkansas delivery, write or wire. St. Louis Exploration Co., 5790 Kingsbury Place, St. Louis, Mo.

FOR SALE—150 feet of 70-pound 15½-inch; 1,000 feet 40-pound 10-inch; 2,700 feet 8¼-inch 32-pound 8-thread and 3,400 feet of new 24-pound 6¼ 1-inch 10-thread J. & L. Woodlawn. Special casing; 100,000 feet of 2-inch line; 20,000 feet of 2-inch tubing and rods; also excellent powers, engines, tanks and other equipment. J. F. Arnold Co., Decatur, Ind.

For Sale
GAS ENGINE UNIT
One 250-KW Crocker-Wheeler compound wound direct current generator, 250 volts, 3-wire, 225 R.P.M. direct connected to.
One 250-h.p. Bruce-MacBeth 4-cylinder gas engine.
THE NATIONAL POWER MACHINERY CO.
1911 Scranton Road Cleveland, Ohio

FOR SALE—EQUIPMENT

BARGAIN
Slow Speed Motors
Two 200-h.p. new 235 R.P.M. Westinghouse electric motors at fraction of original cost.

STANDARD ELECTRIC MACHY. CO.
9 E. Hill St. Baltimore, Md.

I OUGHT to be able to sell equipment through this section. It must bring good results, because it is filled with Classified Advertisements every week. Guess I'll try it.

MACHINE WORK

RIDLEY MACHINE WORKS—Repairing and building of all kinds of machinery; patents perfected; welding and gear cutting; automobile parts made and repaired. Jefferson and Southwest Blvd., Phone Harrison 5924, Kansas City, Mo.

POSITION WANTED

LIGHT OIL MAN—Refinery man with 10 years' experience, from loading rack to general superintendent, wants good connection. Practical man. Address Box A-400, The Oil and Gas Journal, Tulsa, Okla.

"Buy Christmas Seals"

SALES AND TRAFFIC manager; 10 years' experience, desires connection with refinery, reliable brokerage company or commercial concern serving the oil industry. Also thoroughly familiar with refinery and pipe line accounting and purchasing experience. Box A-510, care The Oil and Gas Journal, Tulsa, Okla.

TAX ACCOUNTANT—Accountant experienced in ad valorem tax appraisals and levies, wishes position with oil company. References given. Address Box 602, El Dorado, Kans.

PETROLEUM ENGINEER, 8 years' experience building and operating gasoline plants and pipe lines. Have thorough knowledge California drilling production and gasoline practice. Wish position anywhere, especially foreign service. Box A-491, The Oil and Gas Journal, Tulsa, Okla.

ELECTRICAL Engineer, throughly experienced in design of electrical equipment in refinery, desires position in Tulsa; best reference; formerly with Sinclair. Box A-481, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

EXECUTIVES, ENGINEERS, now earning $3,000-$25,000 will find our individual, confidential service a dignified and effective medium to make desired connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Jacob Penn, Inc., 305 Broadway, New York City, N. Y.

WANTED

WANTED—Producing royalties. Oklahoma and Kansas. Give full details. P. O. Box 502. Independence, Kans.

WANTED—Blocks or offset acreage on structure. Must stand close investigation and will deal only with principals. Submit maps and all data. Box A-460, The Oil and Gas Journal, Tulsa, Okla.

WANTED
Large operating company wants block of acreage for test well. Submit your proposition in detail. Albert A. Beymer, Geologist, 10 Carlile Palace, Pueblo, Colo.

WANTED—Second-hand line pipe and casing for spot cash. Phone or write Jay Kornfeld, 1338 South Owasso, Tulsa, Okla., Phone 5411.

WANTED

WANTED — Information regarding zinc, lead, antimony, bauxite, gold and silver deposits, and oil structures in Oklahoma and Texas. Box A-463, The Oil and Gas Journal, Tulsa, Okla.

WORK OF ANY KIND wanted for first-class No. 30 Star machine. Owner will work as driller. Write P. O. Box 701, Davis, Okla.

WANTED IN NORTHERN TEXAS
Blocks or offset acreage on structure, must stand close investigation and will deal only with principals. Submit maps and all data. Box A-521, The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

FOR SALE—One Booster Station complete with building, A-1 condition, $800; one loading rack pump, A-1 condition, $300. Box 82 or phone 105, Morris, Okla.

FOR LEASE IN WINFIELD
Industrial tract 100x140 feet on paved street with gravel alley. Three freight stations near by. Write Box 526, Winfield, Kans.

"Buy Christmas Seals"

BUSINESS OPPORTUNITIES
If you have oil interests in the southwest and want to connect with a firm of experienced drillers and oil operators qualified to handle every angle of development from leasing to completion; who can get the maximum results from minimum expenditure, or if you contemplate becoming interested in the oil business, we want to get in touch with you. Can furnish the best reference as to ability, honesty and integrity and can deliver the goods. The purpose of this ad is to make a legitimate connection with someone who means business and can successfully finance us. Address P. O. Box 1427, Wichita Falls, Texas.

STOCK SELLING

Stock-selling campaigns planned and executed by an expert; every detail handled quickly, economically and effectively; established reputation.
WILLIAM R. THURSTON
33 West 42nd Street
New York City, N. Y.

Form your own company or incorporate with others, and colonize rich, low-priced agricultural land in
MEXICO
Investment safe; profit attractive; large capital not necessary. I make the building of a community a success by handling intelligently Agricultural Surveys, Soil Surveys, Production Surveys, Marketing Surveys; Purchasing, Financing and Colonizing Methods; Community Planning and Development Work. Industrial Engineer, Box 1064, El Paso, Texas.

ACREAGE FOR SALE
Industrial site and oil prospect near Houston, Texas. Fronting on ship channel. J. A. Stephens, owner, Box 789, Shreveport, La.

CORE DRILL your structure with diamond drills and reduce the hazard of wildcatting. Let us help your geologist correlate structure before you put cable tools at work. The cost is relatively small and the possible saving enormous. On well located tracts we will accept acreage in lieu of profits. Drilling Corporation of America, George H. St. Clair, General Manager, 205 Cosden Bldg., Tulsa, Okla. Phone 3-9031.

BUSINESS OPPORTUNITY

ERNEST F. GARDNER A-511 Ridge Arcade, Kansas City, Mo. Nationally known writer of powerful, convincing advertisements, letters, circulars, booklets. Twenty years' experience. Submit your problem for free suggestions.

FOR SALE
Best trackage property in Springfield —1½ acres centrally located—on paved street; suitable for manufacturing, or wholesale oil distributing station. J. Blaine Berry, 705 E. Brower St., Springfield, Mo.

WHO WILL PUT A WELL DOWN?
20,000 acres with first class rig on the structure, with tools. High spot is on this, with structure running through the center. It has never been drilled. First class geologists' reports. All labor, coal and water hauling will be taken in stock. For this we want a well put down. Write George E. Maple, Marias, Mont.

CAPITAL—United States and Canadian, can be quickly reached through brokers, bank managers and salesmen. Valuable information upon request. Amster Leonard, First Natl. Bank Bldg., Chicago, Ill.

"Buy Christmas Seals"

MY SPECIAL Star 30 drilling machine, calf wheel attachments; located in Osage County, with capable men for drilling; would consider interest in lease, also carry my part of operating expenses; cordage and tools; good condition; give location of your lease with proposition and references. Box A-470, The Oil and Gas Journal, Tulsa, Okla.

WE WILL do your core drilling for structure on contract; or rent or sell you a diamond drill with complete equipment so that you can do your own work. George H. St. Clair, 205 Cosden Bldg. Tulsa, Okla.

BUSINESS SERVICE

F. C. CHILDS
Consulting Petroleum Refinery Specialist.
Plans, specifications, costs for refineries, inspections, and appraisals made for purchasers, processes investigated. Advice on investments, manufacturing difficulties, excessive costs and losses overcome. Refining value of any crude ascertained, 25 years practical experience in all branches of the refining industry.
P. O. Box 264. Telephone 275
Coffeyville, Kans.

CAREFULLY COMPILED summary of oil prospecting and development in the San Juan Basin to date, mailed for $1. Township maps showing permit and leaseholders for $1. Gip Smith, Aztec, New Mexico.

MULTIGRAPHING

"REAL MULTIGRAPHING"
Every job is the job with us. Direct Mail Advertising Specialists—Multigraphing, Mimeographing, Mailing Lists. Complete Mail Campaigns from you to your prospect's desk.
THE PUBLIC LETTER SHOP
Pan-American Bldg. Tulsa, Okla.

OLD FRIENDS

AARON GREENLEE, formerly of Terre Haute, Ind., communicate with parents at once. Any information of whereabouts of Aaron Greenlee will be appreciated by his father, Weston Greenlee, 208 South 10½ St., Terre Haute, Ind.

MAIL LISTS

MAILING LISTS
Oil and other stockholders
in over 1,000 companies; 1260 Texon Oil & Land Co. $10.00. 3455 Ralph Dudley Oil Co. $25.00 and 600 other oil companies. Write for detailed price list.
A. F. Williams, Mgr.
166 W. Adams St.
Est. 1880 Chicago, Ill.

ADDITIONAL CLASSIFIED WANTS ON PAGE 151

METERS

For Measuring Production and Distribution of

Oil–Gasoline–Gas

and Other Fluids

Also Manufacturers of meters for water, gasoline, oil, air and other fluids.

Please note change of address

PITTSBURGH METER COMPANY

General Offices and Works:

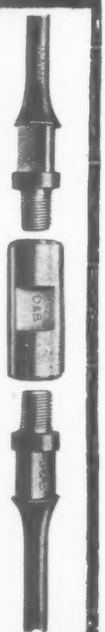
7800 Susquehanna St., PITTSBURGH, PA.

SALES OFFICES:

New York—50 Church St.
Chicago—5 South Wabash Ave.
Kansas City—Mutual Bldg.
Columbia, S. C.—1433 Main St.
Seattle—4038 Arcade Bldg.
Los Angeles—Union Bank Bldg.

A Catalogue worth Knowing—

— AND YOURS For the ASKING



Catalogue No. 5, of the "D & B PUMP & SUPPLY CO.," ought to be in the hands of every producer and oil worker. It's worth knowing.

You will find that this new book, just off the press, and copyrighted, contains valuable knowledge in such form as to be easily remembered.

In addition you'll know more thoroughly than ever before, all about the famous "D & B" products:—"D & B" Pumps, Sucker Rods, etc., which the industry is so rapidly adopting as a standard of excellence.

The "D & B" Catalogue, like "D & B" products, is business-like, efficient, authoritative. Write for YOUR copy without delay.

D & B PUMP & SUPPLY CO.

301 West Avenue 26, Los Angeles, California

Branch Factory: Love Aviation Field, P. O. Box 1033, Dallas, Texas
Branches: Torrance, Taft, Coalinga, Bakersfield, California.
Represented by leading Supply Companies.

OKLAHOMA FIELDS

(Continued from Page 70)

got oil sand at 1,536-1,545 feet, drilled to 1,700 feet and plugged back to 1,550 feet; the well is good for 5 bbls. naturally. The Sand Springs Home's No. 1 Johnson, NE cor. SW NW, Section 14-19-11, was dry and abandoned at 2,230 feet; F. B. Jackson and others' No. 1 Childers, west half NW NE, Section 4-19-12, was spudding; Bruner Oil Co.'s No. 2-A Partridge, north half SE SW, Section 5-19-12, drilling at 1,200 feet. The Echo Oil Co.'s No. 1-A Grayson, SW cor. NE SW, Section 5-19-12, got oil sand at 1,930-1,945 feet, total depth 2,049 feet. It was shot with 60 quarts and made 50 bbls. the ensuing 24 hours.

The Echo Oil Co. is moving in a rig for No. 3 Grayson, west half SW NE, Section 5-19-12. Sand Springs Home was spudding in No. 2 Berryhill. The same operator abandoned No. 1 Foster, C south half NW SW, Section 7-19-12. It was dry at 2,156 feet.

Miscellaneous Operations

Hagerling and others are drilling at 600 feet in No. 2 McCoughtry, C NE NE NW, Section 35-5-8w, Grady County.

In Comanche County A. B. Coon is rigging up No. 1 L. C. Sherriff, SE cor. SE NW, Section 10-1-9w. The Ka Wye Oil Co. was rigging up No. 4 Hine, NW cor. NW SW, Section 25-1-9w.

McMann & Ladd have abandoned the location for No. 1 Field, SW cor. NW SE, Section 35-17-4w, Logan County.

The Acme Development Co. abandoned as dry its No. 2 Fugate, C NW SE SW, Section 35-6-9w, Caddo County, at 2,414 feet. The Lone Star Gas Co. got a 50-bbl. well in broken sand at 1,849-2,405 feet in No. 4 Lackey, NE cor. SE NW, Section 11-5-9w.

Two new wildcat operations have been started in Noble County. Spencer & Vickery have a machine up for No. 1 Bucke, NE cor. NW NE, Section 4-21-2w. The Belt Petroleum Corp. has a rig on the ground for No. 1 Thieble, south half SE SE, Section 29-21-1.

The Atlantic Oil Producers Co. has a 9,000,000-foot gas well in a sand at 1,307-1,420 feet in No. 1 McCoughtry, CSL NW, Section 35-5-8w, Grady County.

Fisher & Brannon got 16,000,000 feet of gas in sand at 1,997-2,006 feet in No. 3 Worrell, SW cor. NW, Section 22-1s-8w, Stephens County. The Magnolia Petroleum Co. drilled No. 1 Bull, SW cor. SW NW, Section 28-1s-9w, to 2,256 feet and got 2,500,000 feet of gas from sand at 2,248-2,256 feet. The Gold Line Oil Co. was drilling at 500 feet in No. 2 Tettleton, C NW SW, Section 9-1s-9w.

Shaffer & Sultan are rigging up No. 3 McCord, C SE NW SW, Section 26-2s-11w, Cotton County.

The Holbrook Oil Producing Co.'s No. 1-A Hickman, south half SE SE NE, Section 30-2s-7w, Stephens County, was dry and abandoned at 1,810 feet.

Eureka Oil & Gas Co.'s No. 1 Earl, NW cor. NE NW SE, Section 23-11-25, Sequoyah County, was drilling at 3,000 feet.

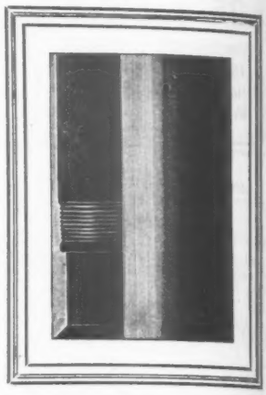
The Josey Oil Co. and Marland Refining Co.'s No. 4 Ellis SW cor. Section 36-19-5, Payne County, was producing 165 bbls. naturally from sand at 3,455-3,488½ feet. The Carter Oil Co.'s No. 2 Cox, C NE NW SE, Section 17-19-6, was dry and abandoned at 3,709 feet.

The Shaffer Oil & Refining Co.'s No. 9 Laughlin, NW cor. NW NE, Section 2-18-5, was drilling at 3,270 feet in a sand topped at 3,263 feet, and producing 8,000,000 feet of gas. The Home Gas Co. was spudding in No. 3 Ellis, NE cor. SW NW, Section 1-18-5.

The Holbrook Oil Producing Co. have abandoned No. 1-A Hickman, S half SE SE NE, Section 30-2s-3w, Stephens County, at 1,810 feet.

BAN UNAPPROVED BURNERS

Ivan Escott, general inspector of the Home Insurance Co., has addressed a letter to the vice president of that company in which he suggests penalizing unapproved oil burners.



Texas Pattern Shoe.

Larkin

Shoes
Packers
Die Nipples
Swabs
Clamps
Oil Savers

QUALITY - First
Prices Reasonable

Sold By Leading Supply Companies

LARKIN Packer Co.

St. Louis, Mo. Tulsa, Okla.

Backed by 48 years oil field experience

Almost two generations of Service and Experience.

A record of achievement that can be pointed to with great pride.

B & S Standard Type Oil Country Boilers are designed and built in strict accordance with the A.S.M.E. Boiler Code.

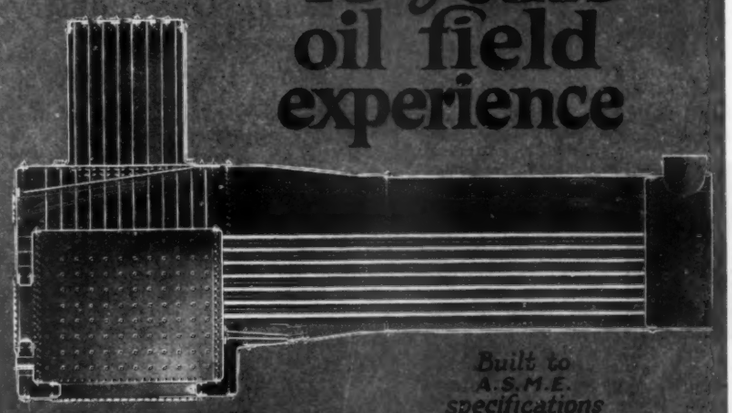
All plates of B & S Boilers are open hearth homogeneous steel of fire box and flange quality.

Horizontal seams of the barrel and connection sheet are triple riveted.

Surely, you need a Boiler that is powerful and rugged in *all its details.* Then specify B & S Boilers.

Write for circular No. 15 that explains more fully.

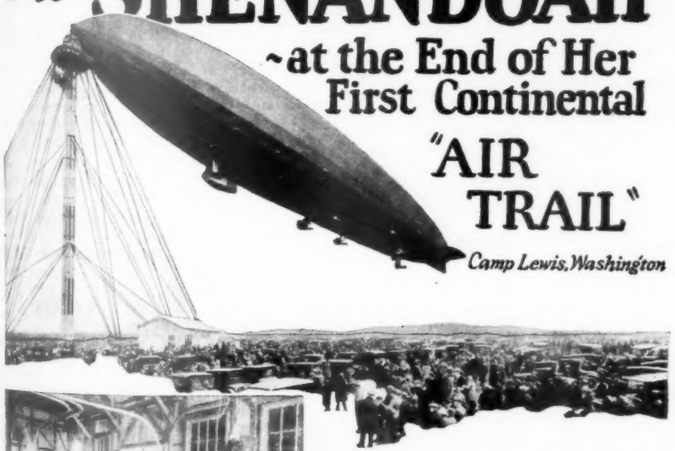
BOVAIRD & SEYFANG MANUFACTURING COMPANY
Bradford, Pa.



The Bovaird & Seyfang Drilling Boiler

Also carried in stock by Republic Supply Co. stores and Bovaird Supply Co. stores

The "SHENANDOAH" ~at the End of Her First Continental "AIR TRAIL"

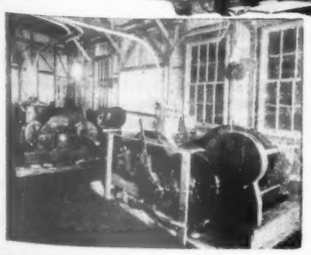


Camp Lewis, Washington

THE selection of Climax Engines to provide the "power that would not fail" in landing the Shenandoah was justified, and is just one more significant example of the absolute confidence men who know engines have come to place in—

CLIMAX

The "Trustworthy" Engine



Three Climax Engines power the landing gear machinery at Camp Lewis, Washington, and three in the Hawaiian Islands.

Moored to Her Tower "Without a Hitch"

by Three CLIMAX Engines and Three LIDGERWOOD Winches

Regarding this Climax performance, the Pacific Hoist & Derrick Company writes:

"With reference to the landing of the Shenandoah, we understand that this is the first successful landing made on any tower in the United States. There were no hitches in the operation of the landing gear; all the engines were running in perfect shape. The landing was made in the early morning hours, and on Sunday the Shenandoah flew over the city of Seattle on her return trip to Lakehurst, New Jersey."

Contractors may be sure of Power Dependability by selecting Machines of the following makes, all Climax-equipped:

Bay City Dredge Works, Bay City, Mich.
Brown Hoisting Machinery Co., Cleveland, Ohio
Byers Machine Co., Ravenna, Ohio
Equitable Asphalt Maintenance Co., Kansas City, Mo.
Fairbanks Steam Shovel Co., Marion, Ohio
Fate-Root-Heath Co., Plymouth, Ohio
Greiman Ditcher Co., Inc., Garner, Iowa
J. T. Tractor Co., Cleveland, Ohio
Keystone Driller Co., Beaver Falls, Pa.
Lidgerwood Manufacturing Co., New York, N. Y.
Link-Belt Co., Chicago, Ill.
Locomotive Crane Co. of America, Champaign, Ill.
McMyler-Interstate Co., Cleveland, Ohio
Mundie Manufacturing Co., Peru, Ill.
Northwest Engineering Co., Green Bay, Wis.
Orton & Steinbrenner Co., Huntington, Ind.
Parsons Co., Newton, Iowa
Rix Compressed Air & Drill Co., San Francisco, Calif.
Russell Co., Massillon, Ohio
Vulcan Iron Works, Wilkes-Barre, Pa.
Geo. D. Whitcomb Co., Rochelle, Ill.
W. T. Young Engine Co., Oil City, Pa.
and many others.

CLIMAX ENGINEERING CO., 32 West 18th Avenue, Clinton, Iowa

Sales and Service Stations in 30 Principal Cities

See Climax Engines at the National Good Roads Show, Coliseum, Chicago, January 5-9, 1925, Space E.-10, Main Floor.

Oil Securities Quiet; Others Strong

Movement From More Active Issues to Oils Expected to Take Place Before Long. One Industry Exceeding 1918 Business

By N. O. Fanning
Room 543, No. 30 Church St., New York

NEW YORK, Dec. 4.—Oil securities were quiet and the trend was downward during the past week. Although the general markets were strong and active, oils still failed to follow the lead. This is attributed more to the absence of public buying in the stock markets, except in those issues which show substantial advances, as well as by switching from oils to the more active issues on the part of professional traders.

It is expected that before long a movement from other issues to oils will take place. Although conditions in the oil industry are not showing marked improvement, due to the upward trend of crude oil production, it is not believed this will hinder buying of oil securities on the part of those who maintain that with general business better the oil industry cannot fail to improve, regardless of momentary conditions.

The activity and breadth of the market for stocks on the New York Stock Exchange since the election have exceeded all previous records for a similar period. Prices have advanced from 10 to 20 points in such groups as rail, steel and public utilities. Still, oil securities have made only small gains with a few minor exceptions.

The action of oil stocks under these circumstances has puzzled more than one student of the stock market. There is not an industry in the world of any great importance that has shown any bigger advance since the World War than oil. Many big industries have not yet been able to repeat in the volume of business the records made during the World War, while the larger oil companies are doing from 50 per cent to 100 per cent greater business than they did in 1918.

While many companies have been handicapped by the increased crude storage burden, the belief is almost general that in the near future consumption will pass the demand, in which case higher prices may be expected for crude and refined oil. In this event, many are inclined to the belief oil securities as a class will participate in an unprecedented boom.

Furthermore, basing the present strength and activity in the stock markets on political developments, the latter are as favorable to the oil industry as to almost any other, with the possible exception of the railroad industry.

Deplore Undue Speculation

Leaders in the oil industry do not anticipate undue speculation in oil stocks with pleasure, as there is bound to be a reaction. The idea that prices of oil have to soar and oil stocks boom as an accompaniment to prosperity in the oil business is not looked upon with favor for this reason.

Furthermore, a boom in stocks results in speculation in questionable securities, oil as well as other. After the experiences of 1919 and 1920, caution is uppermost in the minds of most students of the situation in the stock markets.

Exceptions to Weakness

There were, as usual, exceptions to the general rule of weakness in oil stocks during the past week. The Pan American Petroleum & Transport issues were strong and active, Union Tank Car common advanced materially, Royal Dutch was strong and Shell Union Oil was unusually active at its best price of the year, 20⅝. Vacuum Oil was firm around 81, while International Petroleum was active and held close to 24.

Shell Union Oil

It is estimated that during the past week almost 50,000 shares of Shell Union Oil common changed hands at 20½ and 20⅝, at which prices the stock sold almost the entire period.

Marland Oil stock had been hailed more or less as a probable leader of an upward movement in the oil issues. It advanced above 40 but then reacted several points, as the upswing in the oil

On the New York Curb Standard Oil of Ohio common advanced to more than 380, reacting later several points. group failed to materialize.

Associated Oil

Associated Oil reached 33, a new high on the move, as other oil stocks reacted. It is understood that stock of both Associated and Pacific Oil has been purchased in the open market by Standard Oil of California during the last year and a half.

General American Tank Car

General American Tank Car Corp. reports a substantial increase in inquiries for cars and predicts 1925 will be a better year than 1924 both as to volume of business and earnings. The company will close the current year with earnings equivalent to $6 a share on the 253,570 shares of no par common stock after dividends on the $9,183,400 7 per cent stock, compared with $4.66 a share in 1923.

Present operations are about 75 per cent of capacity with bookings to insure this rate the next few months. Plans for erection of plant at New Orleans are under consideration.

Marland Oil Co. will redeem at 105 and accrued interest, on February 1, 1925, all of its outstanding 7½ per cent Series B sinking fund gold bonds due April 1, 1931,, of which $2,295,000 is outstanding. Retirement of this issue as well as $2,710,000 8 per cent sinking fund bonds on April 1 is provided by issue of $20,000,000 two-year 5 per cent notes maturing November 1, 1926, recently sold.

Boyd Oil Co.

The offer of the Boyd Oil Co. to sell 25,000 shares of new stock to stockholders has been withdrawn. The proceeds of the sale of new stock was to be used for development purposes, but announcement was made that the company had completed arrangements for the sale of several million barrels of oil, and for this reason the offer to sell new stock was withdrawn.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	§Dividend Rate	Clos. Quotations Dec. 8	Dec. 1	1924 High	1924 Low	1923 High	1923 Low
1.	American Republics	..	..	39	*39	43	25	..	..
2.	Associated Oil	25	6	32	32	34⅝	27⅝	29¼	29½
3.	Atlantic Ref. com.	100	..	89½	91	140½	78½	160	98¾
4.	Barnsdall "A"	25	..	21	19	21⅝	14	35	9⅞
5.	California Pet. com.	25	7	23½	23½	29	19⅞	28½	17½
6.	Cosden & Co. com.	..	..	26	25⅞	40¼	22⅝	62¼	23¾
7.	General Am. Tank.	..	†3	47½	*48	49¼	35½	71⅝	40
8.	General Asphalt	100	..	56½	51¼	52	31⅝	64	23
9.	General Petroleum	25	8	42⅝	42⅝	45	38⅝	..	..
10.	Houston Oil	100	..	75⅝	74¼	82½	61	78	40¾
11.	Independent Oil & Gas.	10	..	11⅜	11	13½	6¾	11¼	3¾
12.	Indian Refining	10	..	6	6	7	3⅝	8½	4
13.	Invincible Oil	50	..	14¾	14¾	16⅞	11¾	19¼	7½
14.	Maracaibo	..	..	28½	27½	37½	26⅝	28¼	16
15.	Marland	..	..	38	37¾	42	29	59⅝	18½
16.	Mexican Seaboard	..	..	19⅝	20⅝	25¾	14½	19⅝	5⅝
17.	National Supply	50	6	58½	60	72½	54	68	54
18.	Pacific Oil	50	†2	53½	53½	58¼	46	52½	31½
19.	Pan American com.	20	..16	58⅜	55	61¼	44½	93½	53
20.	Phillips Petroleum	..	†2	35⅝	36	42¼	28½	69⅝	19⅜
21.	Producers & Refiners.	50	..	26¾	28	43½	22¾	58¼	17½
22.	Pure Oil com.	25	6	29⅞	28	30¼	20	32	16¼
23.	Royal Dutch, N. Y. sh.	13.40	2.62	49	46½	59⅜	40⅜	55⅛	40½
24.	Shell Transport	10	x92⅛	39⅞	*38	41⅜	33	41¼	29½
25.	Shell Union com.	..	†1	23	20⅝	22	15⅝	19¼	12⅝
26.	Simms Petroleum	10	..	17⅝	17⅜	19	10⅞	16¾	6½
27.	Sinclair Cons. com.	..	..	16	16⅝	27½	15	39⅝	16
28.	Skelly Oil	25	..	31¼	21	29	17½	35	12¼
29.	Standard of California.	25	8	61⅛	62⅛	68½	55½	64⅛	47½
30.	Standard of N. J. com.	25	4	37½	37½	42¼	33	44¼	30⅝
31.	Standard of N. J. pfd.	100	7	117⅛	116⅝	118⅝	115⅝	118¼	114¾
32.	Superior Oil	..	..	4½	4½	8⅛	2⅝	6⅜	2
33.	The Texas Co.	25	12	43¼	43⅝	45⅝	37⅝	52⅞	34⅝
34.	Texas Pac. Coal & Oil.	10	..	11⅝	10⅝	15¼	8¼	24⅝	8½
35.	Tide Water Oil	100	4	*129	127½	151	116¼	144	94
36.	Transcontinental	..	..	4	4½	6¼	3⅝	14½	1¼
37.	Union Oil of Cal.	25	7.2	36⅞	37	37½	35½	..	..
38.	Union Tank com.	100	5	*125	*124	132⅞	94	114	106
39.	White Eagle Oil & Ref.	..	2¼	26½	26½	29⅝	23⅛	30⅝	20½
	Standard Oil Stocks								
40.	Anglo-American Oil	£1	25	18	17½	18	14⅝	19¾	13½
41.	Borne Scrymser	100	12	*225	*200	264	150	153	110
42.	Buckeye Pipe Line	50	14	59	62½	85½	61	94	57½
43.	Chesebrough Mfg. Co.	25	14	48⅞	49½	52½	29¼	340	205
44.	Crescent Pipe Line	25	..	*13½	*12¼	20	11¼	25	15
45.	Cumberland P. L.	100	10	*136	*132	148	109	117	80
46.	Eureka Pipe Line	100	8	82	90½	105	74	117¼	87
47.	Galena Signal com.	100	4	58	59	69¾	52⅜	78	55
48.	Humble Oil & Ref.	25	4.8	39½	41	43¾	36	41	28¼
49.	Illinois Pipe Line	100	12	*129	134½	161	123	171	115
50.	Imperial Oil Ltd.	25	12	112	111½	119	99	123	92
51.	Indiana Pipe Line	50	8	73	77	100	66	103	81
52.	International Pet. Co.	100	x50	23½	22	22¼	16⅞	24⅝	13¼
53.	Magnolia Pet. Co.	100	4.5	137	138	160	124	166	123
54.	National Transit	12.50	16	*22	23¼	26⅝	21¼	29	19½
55.	New York Transit	100	10	61	66½	97	54½	138	70
56.	Northern Pipe Line	100	6	*82	86	107½	73	111	96
57.	Ohio Oil Co.	25	8	63⅝	64⅝	79½	58	85⅝	48¾
58.	Penn-Mex. Fuel	25	..	33	*35	45⅝	32¼	45	10½
59.	Prairie Oil & Gas	100	8	203½	200½	269	194½	272	152
60.	Prairie Pipe Line	100	8	106½	106½	111	100	117	93
61.	Solar Refining Co.	100	15	204	209	225	170	212	161
62.	South Penn Oil	100	..	133	*131	176	117	196	100
63.	South West Pa. Line	100	4	71	78	89	71	89	66
64.	Southern Pipe Line	100	8	85	90	100	83	116	87
65.	Standard of Indiana	25	10	59¾	60¾	69⅜	54¼	69⅞	48½
66.	Standard of Kansas	25	..	36⅞	37½	50½	32½	56¼	36½
67.	Standard of Kentucky.	25	16	119½	119⅝	121¼	101	109½	76
68.	Standard of Nebraska	100	20	245	255	256½	198	280	186
69.	Standard of New York.	25	5.6	43¼	44½	48	37¾	49¾	35½
70.	Standard of Ohio com.	100	10	348	366	377½	277	320	270
71.	Swan & Finch com.	25	..	*23	26	28	20	..	..
72.	Vacuum Oil	25	†3.75	80¼	80⅝	83¼	56½	55½	40
73.	Washington Oil	10	..	*30	*30	29	26	28	20¼
	Miscellaneous Stocks								
74.	Cities Service bks. sh.	..	†21	16¾	17¼	19	13¼	18½	12¾
75.	Gulf Oil Corp. of Pa.	25	6	65½	66	67⅝	56	68¼	45⅝
76.	Mutual Oil	5	10	12	12¼	14	9¾	..	..

*Bid no sales. †In dollars. §The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Dec. 8	49.49	Nov. 3	48.16	Sept. 27	46.70		
Dec. 1	49.59	Oct. 27	47.58	Sept. 22	47.02		
Nov. 24	50.23	Oct. 20	46.99	Sept. 15	47.41		
Nov. 17	50.07	Oct. 11	46.24	Sept. 8	47.89		
Nov. 10	51.86	Oct. 6	46.30	Aug. 30	47.59		

GASOLINE STRONGER IN OIL CITY MARKET

OIL CITY, Dec. 6.—The leading feature of the refined market for northwestern Pennsylvania during the past week was the advance in the tank wagon price of gasoline in Pennsylvania posted by the Atlantic Refining Co. This strengthened the gasoline price situation in the State somewhat, but had been discounted to a great extent. The demand for gasoline is now off some on account of wintry weather in much of the marketing territory of the local refiners.

Neutrals were the leading feature of the market during the week. They are very strong and the market for them is going wild. The demand is good but there is not a great supply of them to offer. It is believed a large quantity of neutrals being bought is being put in storage to meet future consumption.

The position of steam refined is not so good at present. The demand is weaker and prices are easier.

Kerosene is strong and up in price with good demand.

Wax continues to be strong and hard to secure.

Fuel oil is now very strong and in big demand.

EMBARGO LIFTED

OIL CITY, Pa., Dec. 8.—The embargo on the running of crude oil by the National Transit Co. for other than immediate delivery will be taken off today, according to an announcement by officials of the company. In announcing the removal of the embargo, officials of the company state that this action was made possible by the cooperation of the producers, shippers and refiners. They said that the producers responded to the emergency splendidly and that this was the reason for the early removal of the embargo. They state that about 50,000 bbls. of crude have been disposed of, which is the equivalent of about a week's production along the lines.

PENN WELL BAILING

On Tuesday morning, R. P. Penn and the Atlantic Oil Producing Co.'s No. 1 McCorkle, 1 mile north of the Boyd Oil Co.'s No. 1 Simmons, had drilled to 2,964 feet in sand topped at 2,986 feet, and was breaking down to bail. The Kirby Petroleum Co.'s No. 1, the west offset to the McCorkle well, was drilling at 2,961 feet, and planned to go to 2,971 feet before bailing.

Sales and Service Stations in 50 Principal Cities
See Climax Engines at the National Good Roads Show, Coliseum, Chicago, January 5-9, 1925, Space E.-16, Main Floor.

Five Causes of Overproduction--Teagle

President of New Jersey Company Tells A. P. I. That Most of the Industry's Troubles Have Been of Its Own Making. Suggests Remedy

By Walter C. Teagle
President, Standard Oil Company of New Jersey.
Address Before American Petroleum Institute, Fort Worth, Tex., December 9

During the past two or three years many people in the petroleum industry have been groping about and asking why, in an era of unexampled growth and development, the rewards of the industry have been so inadequate to the service performed and the capital employed. In common with others, I, too, have tried my hand at diagnosis. I have tried to read the present and the recent past. In The Lamp, our company publication, and in some comments before a gathering in Oklahoma, I have already set forth my views. Let me say quite frankly that the object was to promote discussion of the views advanced so that from this reaction the industry would at least develop:

1. The cause of our present difficulties;
2. A remedy;

all to the end that if a similar situation should threaten in the future the industry might thereby be in a position to avoid a repetition of the experience of the past.

In some quarters these views have had the benefit of very able and constructive criticism, which I greatly appreciate, but it is evident that others have criticized without understanding. To the man who thinks that I consider crude oil no more valuable than coal, or that the price of crude oil is too high, or that when I refer to crude I do not expressly exclude those grades possessing certain qualities which give them a special value, such as Pennsylvania, I have only to say that I regret the limitations on my powers of self-expression.

One rather general reaction which followed the exposition of my views was that I was pleading the cause of fuel oil, because the Standard Oil Co. (New Jersey) operates a great deal of cracking equipment and through patent ownership was assumed to have an advantage in this respect. This situation I thought was better understood, but since it apparently is not, permit me to say that there is no company, nor group of companies, which controls all cracking processes. Any refiner can not only install cracking equipment, but may have his choice of a score or more of proved designs, and if he prefers the type used by our company, it can be his upon a royalty basis which is far from burdensome.

Five Causes of Overproduction

Now, if we were to take a vote as to the major problem of the industry during the past two years, it is probable that "overproduction" would head the poll. We all have our theories as to the cause of overproduction, and I offer mine, which are five in number.

Primarily, overproduction today is due to the fact that when estimating the gasoline requirements of the future we overlooked the possibility of those requirements being supplied in a considerable part from other than straight run gasoline. Ignoring the contributions which casinghead and cracked gasoline have made to the supplies of the present we went ahead in the belief that the production of crude could never for long keep abreast of the demand for gasoline.

In the second place, although aware of the progress being made in the extraction of gasoline from natural gases and the marked improvement in the cracking processes we failed to appreciate that through these agencies the industry is itself, in meeting the demand for gasoline, now able to make one barrel of crude do the work formerly expected of two. Without appreciating it, the industry had partially solved the problem of future supplies, not through the discovery of new sources of crude, but through the perfection of mechanical processes. It is difficult to realize that from the same amount of crude produced in 1921, we could with the equipment now available meet the estimated gasoline requirements of 1925.

Stocks Fail Their Purpose

Third among the reasons for overproduction is the fact that our petroleum stocks above ground have not performed their true function in the economic scheme of things. Just as in the case of bank reserves, these petroleum reserves were created to be utilized in time of need. Unfortunately these stocks were accumulated at prices averaging higher than those which prevailed during the brief periods when there appeared to exist an unfilled demand for crude. Therefore, they have failed in one of their purposes, namely to stabilize the price of crude and thus meet the fluctuations in

WALTER C. TEAGLE
President, Standard Oil Co. of New Jersey

demand. As if they had not existed, crude prices have been bid up, and instead of drawing on storage, the unfilled demand has been met by new production.

Fourth, the years of inflation following the war attracted much new capital to the petroleum business with accompanying intensified competitive conditions in every branch of its activities. Evidence of this is the multiplication of service stations and the unnecessary duplication of distributing facilities, but at the same time a like transformation occurred in the refining branch in which the potential daily refining capacity showed an increase from 1,186,000 bbls. in 1918 to 2,930,000 bbls. in 1923. Transportation facilities multiplied in like manner. Since the American investor loves a gamble and the premier gamble of the industry is in production, a large proportion of the new capital gravitated in that direction, and it materially augmented the production of crude.

California's Competition

Finally, it required the spectacle of California crude oil moving through the Panama Canal to the doors of the Atlantic Coast refineries to teach us that no producing section can ever again live unto itself alone. Modern means of transportation have so multiplied that the day of the isolation of any field is past. The price of crude oil in any field can be no higher than the sum of the price of the nearest cheaper crude of like quality, plus the cost of transportation, and it is quite conceivable that some day petroleum and its products may flow back to California from east of the Rockies just as they have come from California to the Atlantic Seaboard.

In my opinion we are nearer the high road of returning prosperity if we admit frankly that most of our troubles are of our own making; that we are all in a varying degree responsible, the larger companies including the one I represent perhaps in greater proportionate degree; that none of us is able to say "I told you so," and that of us all the producer of crude is perhaps the least to blame. The effort of the producer to find and sell crude at a profit is also the objective of the Standard Oil Co. (New Jersey), for we produce half of the crude we refine. The struggle of the producers from whom we buy is also ours, for if we pay an unremunerative price not only is our source of supply uncertain, but we must also sell our own production in the form of refined products at prices unremunerative to us. Therefore, any policy that will help the producers will help us, and any policy which will injure him will injure us.

Speaking as a Producer

Speaking as a producer, the object which most completely and distinctly meets my eye is the accumulated stocks of 530,000,000 bbls. of crude and products in storage in this country. Who is responsible for it? Certainly not the producer. His only barometer of the needs of the consuming market has been the posted well price. There could be to him no other interpretation of a price advance than that the world was signalling for more crude. It was a natural assumption that a higher posted price would be the price that new production would receive, so the producer assumed an additional liability and expanded his drilling program. All this is recent history. New production came in apace. The crude began to back up and some purchasing companies issued prorate orders. It did the producer no good to be disgruntled when told to store most of his new oil in his own tanks or take a lower price for the amount run. In fact, when following a break in the price of crude, another reason rolled around and again premiums were offered and the posted price advanced, the producer did what anyone would expect him to do—he brought in more crude, and for so doing experienced precisely the same unpleasant conditions of the previous year—a repetition of prorate orders.

The producer is interested in the current price of oil not merely because of what he has spent, but also because of what he is going to spend. The protection of what the producer has spent is a constructive act, but the protection of what he may spend is even more constructive. Would the producers, during the past two years, have spent their money for new work at a time of advancing prices had the industry been in a position to correctly appraise the factors which would indicate to the producers the trend of crude prices? The saving of this money would also have contributed to conserving the investment already made. A diagnosis of the conditions which have existed during the past few years is therefore not a futile post mortem, but may prove to be—if correct—helpful for the future.

Stimulated Refining

You will recall that one of the effects of the business inflation following the war was the posted price of $3.50 per barrel for Mid-Continent crude, and a differential of more than 15 cents per gallon between gasoline and fuel oil. This differential materially stimulated the more general use of improvements in refining practice. Many cracking processes had been developed commercially, and the price spread between the market value of the two products yielded a return sufficiently profitable to encourage refiners to install more and more equipment of this character. At the end of 1923, the industry was in a position to supply over 50 per cent of the gasoline requirements by cracking fuel oil. The refining industry had thus placed itself in a position to convert a substantial part of its low value product into its highest valued product at a moderate cost of manufacture.

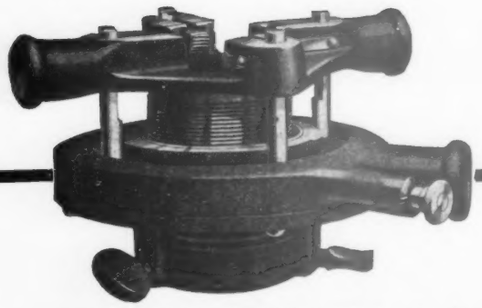
Any business man is familiar with the axiom that a 10 per cent surplus of a product of free commerce will fix the selling price of the whole, and the truth of this has been demonstrated in the industry during the past two years. In 1923 the petroleum industry sold a total of 382,000,000 bbls. of fuel oil, representing 52 per cent of the total consumption of all products, and realized an estimated average price of $1.11 per barrel. An analysis has been made to determine what part of this quantity could have been disposed of otherwise than in direct competition with coal. This analysis shows that the total fuel oil business which, under other conditions, could have been sold at a price higher than coal, was not more than 228,000,000 bbls.

Competed With Coal

If this is correct, it follows that in 1923—to find an outlet for a part of its surplus production—the industry was compelled to sell 40 per cent of its fuel oil, or 154,000,000 bbls., in direct competition with coal. This, however, does not tell the whole story, as actually the entire 382,000,000 bbls. were sold at a price fixed by the 154,000,000 bbls. which were sold in competition with coal. In other words, the average selling price of less than 3 cents per gallon for the whole was determined by this surplus. One might add that this economic waste is being repeated on a like scale this year, and that the situation outlined still applies to the industry east of the Rockies rather than to California, where no competitive coal fields exist, and where fuel oil has almost invariably sold above the posted prices for other than the very high naphtha-bearing crudes.

It is another axiom of business that the market value of any commodity is governed by the price at which a satisfactory substitute can be produced and sold. As I have just said, the price which the industry realized for its fuel oil for the years 1923 and 1924 was not based upon its intrinsic value, but in large part upon the competitive prices of coal. I have also said that during the past five years the industry had equipped itself with manufacturing facilities that could produce one-third of its gasoline requirements from cracking fuel oil. This gasoline is a perfectly satisfactory motor fuel and fills every automotive requirement of straight-run gasoline. The industry can produce gasoline by cracking at a moderate cost of manufacture above the value of fuel oil. Concretely, there-

(Continued on Page 143)



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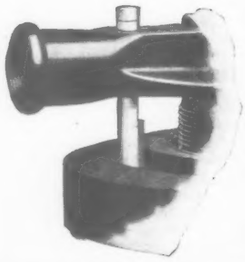

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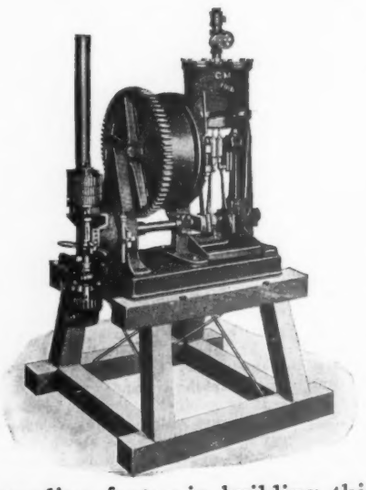

A reorganization of this 23-year-old company has just been affected. Our policy is to continue the high standard of manufacture and service which has been the outstanding factor in building this business since M. C. Bullock, the father of the diamond drill, started experimenting back in 1870.

We will be pleased to hear from oil companies interested in diamond drilling.

STANDARD DIAMOND DRILL CO.
First National Bank Bldg., Chicago

DEVELOPING MODERN CRACKING EQUIPMENT

(Continued from page 124)

establishment of working pressure on a recently charged still by means of the gas evolved by stills already in operation.

Additional inventions were made by others covering the nature of the deplegmators and methods for venting the gases from pressure stills when the pressure becomes too high. This involved more ingenuity than would at first appear necessary in order to avoid ignition of the hot combustible gases. Mr. Clark also introduced the modification of the original Burton still which is not unlike a Heine boiler. This still has been operated to great advantage, although even yet some operators prefer the original type of still. The heat is applied to the still as it is to the Heine boiler, entirely through the tubes, the shells being set over a heavy layer of brick. The chief advantages of the tubular still are:

1. The more effective absorption of heat from the furnace as a result in particular of larger heating surface and also because of the rapid circulation of the oil and the consequent lower deposition of carbon in the heating surface.

2. Greater safety and ease of operation because hot spots on the still bottom are impossible.

3. Carbon suspended in the oil is deposited on the unheated bottom of the still on account of the slow circulation of the oil in that part of the still.

4. Larger output in given time.

As a general thing the pressure still is operated for a period of approximately 48 hours unless the run is terminated by the excessive deposition of carbon. Accordingly the usual cycle of operation, including charging, running, cooling and cleaning, is 72 hours. The yield of gasoline in a single pressure distillation is ordinarily 30 to 35 per cent. The unsaturation of the gasoline is about 10 per cent. By using the tubular still more cracking stock is introduced after distillation begins, and thus it is possible to increase the throughput considerably. The fixed gas from a pressure still consists chiefly of methane and ethane with ordinarily about 8 per cent of ethylene.

Including the number of Burton stills operated by the Standard of Indiana and their licensees widely scattered over the country, with a few in foreign countries as well, we find an immense total of operating units, from which is obtained by far the larger share of all of the cracked gasoline produced.

How the Cross Process Operates

The Cross equipment, developed by Dr. Walter M. Cross and Dr. Roy Cross of Kansas City, Mo., has been installed in a number of refineries. Fig. 1 shows the diagrammatical arrangement of the Cross equipment in accordance with its earlier design. Originally, the Cross brothers started by building a smaller unit which produces approximately 200 bbls. of gasoline per day while on stream and operates continuously from 5 to 30 days, depending upon the nature of the charging stock. Their larger units will treat 1,000 bbls. of total oil or 500 bbls. of new oil per day and give a daily output of 300 or 400 bbls. of gasoline. Recently improvements have been made to the Cross plant which include the substitution of bubble towers for the old type of deplegmators. This gives endpoint gasoline direct from the cracking process instead of the pressure distillate formerly produced.

It is claimed that the Cross process will yield 40 per cent of gasoline from average fuel oil, 65 per cent from gas oil and 75 per cent from kerosene. On the basis of daily throughput the Cross equipment produces about 30 per cent of New Navy gasoline. The equipment has been operated on practically all possible stocks, but the most satisfactory field for the operation of this equipment is upon overhead distillates.

The Cross cracking unit operates at a pressure of 600 pounds per square inch or more and the oil passes through the system approximately as follows:

The oil is pumped in through a line

(Continued on Page 144)

Pushing Production

to meet the demand necessitates the saving of all useless operations about the plant, among which is the constant repacking of piston rods and small valves.

This may be avoided by using

"PALMETTO"

the packing that has the quality to give long, satisfactory service.

Braided for rods, round and square, in 5-lb. boxes.

Such a packing may cost a little more than ordinary packings, but it is worth it.

Twist for small valves. Any size valve packed from one spool by unstranding.

Let us send you working samples to test under your own conditions—no charge.

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DRILLING AND FISHING TOOLS

DRILLING BIT JARS

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Patent Hook Wall Packer—strongest, safest and most simple self-supporting wall packer on the market;
Special Gas Anchor Packers—with adequate protection of rubber for lowering in well under pressure;
Special Packers—for all types of special services;
Patent Improved Sand Pump—20 feet long, flush outside, of uniform, Cold-Drawn "SHELBY" Seamless Steel Tubing.
Never-Slip Pipe Grips—least expensive, swiftest and simplest device made for putting in casing.

LARKIN SERVICE includes:

Large stocks, ready for prompt shipment, of all packers known to the trade.
Packers built especially to suit particular requirements.
Complete line of Drilling and Fishing Tools for sale and for rent.

See *The Larkin Line* at any of the leading supply stores.

LARKIN & COMPANY
Butler, Pa., U. S. A.

Our new Bulletin No. 25 describes *The Larkin Line* Ask for it now.

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SAND PUMPS

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PACKERS

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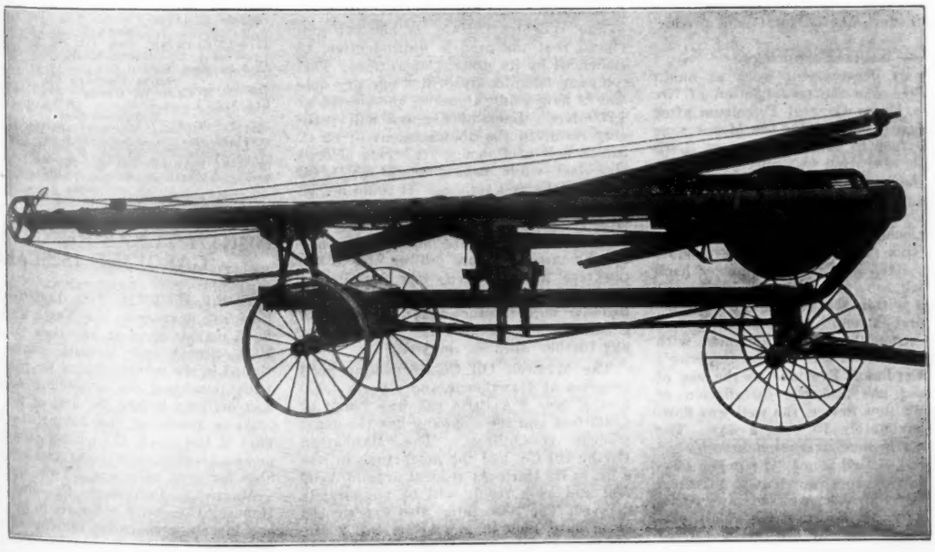

Had nothing on an IRON KING pulling machine when it comes to rugged strength. Its iron and steel construction enables it to bear an immense load and stand up under the most severe strain without injury. It was properly designed, is built right, and as a result is in use in practically every oil field in the U. S. A.

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THE IRON KING MANUFACTURING CO.
BRADNER, OHIO

Say you saw it in The Oil and Gas Journal

CALIFORNIA FIELDS

(Continued from Page 38)

feet, No. 19 at 3,705 feet and No. 20 at 3,900 feet are all scheduled for completion before the close of the present month. The company is not experiencing any degree of success with No. 2 Childs, which showed salt water at 4,033 feet, and a suspension of work would not be surprising.

The company's most interesting test is probably No. 1 Hellman in the extreme northwestern part of the field. The bit is down 5,725 feet and, although the hole is exhibiting favorable symptoms, the ultimate outcome is still in doubt. It would seem that this test is pretty close to the edge of the structure and if any production is secured it will probably be small and rather unsatisfactory. Judging by indications, the Union should add to its daily production by finishing two new producers within the next 30 days. No. 7 Callender, the most westerly test on this lease, secured a very satisfactory showing at 4,064 feet and indications point to a commercial producer. No. 2 Carson, an offset to the Shell's No. 16 Reyes, showed a nice ether cut at 4,355 feet and it is quite probable that this well will be tanking oil soon. No. 8 Hellman, in proven territory at 3,765 feet, should also increase the company's pipe line runs within the next few weeks. Two new holes were started within the last few days, the Henderson Petroleum spudding in No. 1 Del Amo and the United starting work on No. 3 Dominguez.

Rosecrans

E. J. Miley's No. 2 Athens in the central part of the field was the only new well put on production at Rosecrans during the week. It was a fairly good one, coming in from 4,707 feet and registering 550 bbls. of clean 38.3 gravity oil during the first full day's test. This is Miley's second well in this new district. No. 3 has just been spudded in, while a rig is being erected for No. 4 and a location staked for No. 5. The first well, No. 1 Dominguez, of the Marland's quartet is scheduled for production within the next few days. The company's No. 2 is standing cemented at 4,354 feet, while Nos. 3 and 4 show 4,126 feet and 3,890 feet respectively. The Associated is bailing No. 1 Brockley for a production test at 4,907 feet and should have it on production tomorrow if a water shut off has been effected. No. 1 Haviland is being tested for a water shut off at 4,691 feet, while No. 1 Hoge is being recemented following a wet job at 4,344 feet.

No. 1 O'Dea is causing the Barnsdall considerable trouble but the company should have it on production again within a few days. No. 2 on the same lease shows 4,122 feet of hole, while No. 3 is going ahead at 1,075 feet. The company's No. 2 Rosecrans is in the oil sand at 4,365 feet and looks like an early completion. Several stands of drill pipe were twisted off in No. 3 at 3,333 feet and as a result no additional footage was made during the week. Work has been resumed on No. 1 Amestoy of the General Petroleum and No. 1 Trust of the Union in the western part of the field, which, for a time, looked quite favorable. The former shows 6,218 feet of hole and the latter 5,801. It is understood that the Union will make a test of No. 1 Trust before going ahead. The Marine picked up the oil sand in its No. 32 at 4,323 feet and run a string of 8⅝-inch. The company shows 5,016 feet of hole in No. 31 and a rig up for No. 33.

The Pan American is drilling ahead in a gray sand in No. 1 Anderson, north of the field, at 4,355 feet but has not yet had any encouraging showings. George F. Getty has finished work on his three new rigs, while the Petroleum Midway is putting the finishing touches on No. 1 Folsom and has material on ground for No. 1 McCormick. The Sentinel has started work on two new rigs for Nos. 2 and 3 but will not spud in for another week or 10 days. No. 1 Cowan of the Standard, an important outpost, is drilling ahead in a hard sandy shale at 5,322 feet. The Star Petroleum picked up the pay at 4,610 feet and will probably run in the oil string within the next few days.

The Union has three holes which may make a bid for production within the next week or 10 days. The wells in question are No. 3 Rosecrans at 4,688 feet, No. 3 Howard-Park at 4,944 feet and No. 6 on the same lease at 4,738 feet.

Torrance

Development work at Torrance resulted in the completion of only two small wells and, while there were one or two others about ready for production, their completion was delayed. No. 14 Sentinel-Joughin of the Standard, when put on the beam at 3,820 feet, pumped 115 bbls. of fluid, over 25 per cent of which was water. Two cement jobs were required before a production test could be made and, judging by the cut which the production is showing, it does not appear that the company's efforts have been entirely successful. It may be possible, however, that after being on the beam for a week or so, the well will clean up. No. 18 on the same lease is being prepared for the beam at 3,840 feet and a small pumper is expected. No. 28 will probably be the company's next producer on the Marble fee lease as the bit is going ahead quite rapidly at 3,470 feet. The company is making preparations to test out No. 1 Ellinwood at 4,695 feet but the prospects are not any too bright for even a small pumper. The Lora J. Oil Co.'s No. 1 Lomita at 4,780 feet was the only one of the three deep tests being drilled in the field to offer any encouragement.

Long Beach

Completions at Long Beach were conspicuous by their absence and as a result the field production showed a further decline. There is little doubt that Long Beach is on the toboggan and will continue to register additional drops. Many operators hit by the decline have undertaken redrilling and deepening jobs to maintain their production. Five new operators signified their intention of redrilling and deepening in an effort to offset recent losses by starting work. The Shell, Petroleum Midway, Pan-American, United and many small smaller operators have already started work along this line. The field is practically all drilled up and there is, therefore, very little prospect of new wells offsetting the normal decline to any appreciable extent.

About the only work of interest at present centers around the activities of the Shell Oil Co. in its Country Club lease and the work of the United Oil Co. on its Bixby property. Neither of these leases, however, will have any immediate or great effect on the total field production.

Santa Fe Springs

The only development work at Santa Fe Springs was the recompletion of No. 89 Santa Fe by General Petroleum after being plugged back from the Meyer zone at 4,700 feet to the Bell zone at 3,815 feet. The operation was only partly successful, however, as the output, 25 bbls. daily, is cutting 30 per cent water. No. 45-A on the same lease, a new well, is standing cemented at 2,020 feet. No. 61, also on this property, heretofore producing from 4,495 feet, is being plugged back to the Bell zone and will probably be put on a test within the next few weeks.

The first attempt to use compressed gas to stimulate production met with some degree of success in the Superior's No. 1 Wardman. Previous to the use of compressed gas and the installation of the Loomis flow device, the well was flowing approximately 75 bbls. a day. The production is now averaging around 170 bbls. from the Bell zone. The process has not been tested to any extent in this field but if the Superior well maintains its average output, many other small producers would profit by the installation of the necessary equipment.

Miscellaneous Drilling

Another week has passed without any change in the condition of the tests being drilled at Rideout Heights in the old Whittier Field and, judging by their present status, the field looks like a flivver. The Standard has passed the 5,400-foot level in No. 1 Patton, while the Petroleum Midway shows 4,805 feet of hole in No. 1 Seward. The Pan-American, Taylor-California Royalties and Associated are still held up with fishing jobs. The Elwood has pulled out No. 1 Horine, while the O'Donnell Refining Co. has suspended operations in well No. 2 at 4,693 feet. The recent completion of No. 39 Emory as a big well by the Standard in Coyote has stimulated new development work in this district. The company has staked locations for No. 40 Emory and Nos. 101 and 102 on its Murphy lease for early development. No. 100 Murphy, now at 4,104 feet, looks like an early completion. The Standard has a good bet in these two leases and will undoubtedly undertake a continuous drilling program to offset its losses in other fields.

The Richfield district has taken a new lease on life as the result of recent completions and some new work is looked for. The Standard is erecting a rig for No. 18 on Kraemer lease No. 2 to offset No. 1 Bradford of the Chicksan Oil Co., a recent completion in the deep sand at 4,707 feet. The Jameson Oil Co. has secured a lease on the 650-acre Swan Ranch, north of Brea, and is making preparations to drill a test well. The Pan-American has cemented a string of stove pipe in No. 1 Sentous at Inglewood and will probably drill out during the coming week. The Standard is still going ahead in No. 1 Potter-Smith, which shows 5,155 feet of hole, and in No. 1 on Los Angeles Investment Lease No. 2 at 4,665 feet, but little hope is held out for their completion as commercial producers. In No. 3 on Los Angeles Investment Lease No. 1, the company has a prospective producer around 2,000 feet. No. 1 Stocker at 2,656 feet is purely a wildcat and does not look any too good.

E. J. Miley has decided to abandon his Anaheim test which was carried to 5,312 feet. This is the third dry hole chalked up against this area. The Standard was the first to drill and pulled out at 5,635 feet, followed by the Superior a short time later with a 5,000 foot duster. Miley was drilling this well on a sublease from the Marland Oil Co., the original holders of the property. The latter gave Miley a portion of its holdings to prove up the lease. The Oakridge Oil Co. has finally come to the conclusion that commercial production is not present in the Bandini area. The undertaking was a rather costly one as at least $500,000 was expended in exploration work. Four holes were drilled by the company and abandoned as dry. No. 1 Rossi, the last abandonment, was carried to 5,060 feet.

The Wilshire Oil Co. is not yet convinced that the area is unproductive, as evidenced by its present operations. This company has already drilled one dry hole and is now going ahead in the second at 4,200 feet. Lack of finances will probably result in the abandonment of C. C. Stall's hole at Downey. A string of drill pipe lost while drilling ahead at 4,890 feet was the first setback. It could not be recovered and a string of 4½-inch was later cemented at 4,250 feet in order that a production test might be made of a few upper showings before pulling out. When the test was made it was found that water had not been excluded and this, together with the fact that the hole is in a bad shape, precludes the possibility of any further work on the well.

The Winwell Oil Co. is making good progress at Hawthorne and reports 4,050 feet of hole. A little gas was found at 4,005 feet and the company has the usual wildcat possibilities. The Manhattan Pacific Oil Co. had the misfortune to lose a bit in its Hermosa wildcat around 2,700 feet and as a result will be temporarily delayed. The Associated also experienced some hard luck in a wildcat, No. 2 McNally, at Mirada, which shows 6,018 feet of hole. A twistoff left several hundred feet of drill pipe to be recovered but, because of the extreme depth of the test, an abandonment will probably result. A few miles away at Los Nietos, the Standard has carried No. 1 Culp to 5,400 feet and this hole also looks dry. The Magnolia Petroleum Syndicate has run out of funds and No. 1 Twedy at Maywood has been suspended. In the Newhall-Saugus area, the Associated is drilling ahead in No. 1 Newhall at 2,200 feet, while the Union is going ahead in No. 1 Saugus around 1,000 feet. The San Martinez Oil Co., one of the pioneers at Long Beach, has acquired a 700-acre lease near the Associated's hole at Newhall and will apparently be on production if the latter opens up a new field. The Shell is drilling ahead in No. 2 Bryant, located at Seal Beach, around 3,700 feet, the formation being a hard sand. No. 1 Bixby is being carried down in search of a deep sand and is drilling in a hard shell at 5,425 feet. On Section 28-11-22 at San Emedio, the Standard is fishing for some drill pipe in its test on this section at 2,320 feet. Work has been resumed on Section 5-10-22 and 720 feet of hole made. The General Petroleum is going ahead slowly at Comanche Point, Section 31-12-18, in a hard sand at 2,740 feet. At Lost Hills, Section 5-27-20, the Standard has picked up the blue shale at 3,700 feet and is drilling ahead slowly. The Keck Syndicate has staked a location for its first test in Poso Creek, Section 10-27-28. Shallow production is expected and the hole will be carried to around 1,200 feet before abandoning it.

Oil field operations reported to the State Oil & Gas Supervisor show 21 new wells started, as compared with 14 during the previous week, bringing the total for the current year to 1,263, as compared with 1,315 at the same date last year. Of the 21 notices to drill filed this week, 6 were for wells in the Torrance Field, 3 in the Rosecrans Field, 1 each in Dominguez, Long Beach, Newhall, Santa Maria, Los Angeles County, San Barbara County, Napa County and 5 in the fields of Kern County. There were 21 tests of water shutoff made, 7 more than during the preceding week. Deepening or redrilling jobs total 16, as compared with 20 during the previous week. Sixteen holes were abandoned. Permits were issued for the following new wells:

Torrance

Location, Company, Well—
8-4-14 Petroleum Midway Co., Ltd.—Churchill 1.
8-4-14 George F Getty Inc.—Torrance 25.
8-4-14 Standard Oil Co.—Flint 2.
16-4-14 Marble Fee 31.
15-4-14 Marble Fee 32.
25-4-14 Superior Oil Co.—Torrance 56

Long Beach

19-4-12 Pan-American Pet. Co.—Butler 1.

Dominguez

34-3-13 Henderson Pet. Corp.—Susana 1.

Rosecrans

7-3-13 George F. Getty, Inc.—Athena 1.
7-3-13 Athens 2.

Los Angeles County

8-3-14 Chas. McFadden 1.

Newhall

13-3-13 Crawford Syn. Oil Co. 3.

Santa Maria

23-9-34 Rice Ranch Oil Co. 10.

Santa Barbara Co.

Walter W. Gregg—
Lot 177, 1.

Midway-Sunset

32-12-23 Midway Northern Oil Co. 11.
31-31-24 Pacific Oil Co. 70.
5-32-24 Pacific Oil Co. 47.
28-32-24 Pyramid Oil Co. 11.
30-31-24 North American Oil Cons. 16.

Napa County

John E. Callahan—
19-8- 3 Prospect 1.

NORTH TEXAS REPORTS GASOLINE IS SCARCER

FORT WORTH, Tex., Dec. 8.—Gasolines are scarcer in the North Texas refined market than at any time this year. Both export and domestic buyers continued in the market during the past week with purchases for immediate shipment and delivery before the first of the year.

As a result of the buying the latter part of last week, the market opened this morning with scarcely any gasoline available for spot shipment. Two companies —Magnolia Petroleum Co. and Gulf Refining Co.—with refineries in this area, are largely responsible for the advance in 58-60 U. S. Motor gasoline. These two companies have been buying steadily for delivery to their Texas stations paying as high as 9 and 9¼ cents for spot shipment the latter part of last week. The purchases of the Gulf Refining Co. are partially due to the fact that the company has shut down its Fort Worth refinery for repairs. The plant will not resume operations until about the middle of January. The company is the largest re-

tailer of gasoline in Texas and has been compelled to buy from other refiners to supplement its own curtailed refinery output. The situation of the Magnolia is largely the same as that of the Gulf.

Exporters have not been as active as they were the previous week when they were actively buying both 58-60 and 64-66. However, they have taken about all of the 64-66, 375 that was available for shipment during the month. Quotations on 64-66, 375 are as high as 12 cents.

Natural gasolines are easier but prices are still generally firm. A few cars of Grade A has been sold under 8¾ cents but most of the manufacturers are refusing to consider anything under 9 cents. The prevailing prices for Grades B and Double B are 8¾ cents, and 8½ cents for Grade C.

Fuel oils, including gas oil, are also strong. The new Wortham Pool has furnished a new outlet for fuel oil used in firing boilers. This class of business and other interstate shipments are bringing $1.20 up. A majority of the refiners have little material to offer for December shipments and prices on out of the State shipments are 5 cents higher than last week. Gas oil advanced ⅛-cent to ¼-cent during the week.

Even kerosene and distillates are stronger in this area. Both these products have been slow for several weeks but enough orders were placed during the past week to relieve several of the larger refiners of surplus material and they have either advanced their prices ⅛-cent or are holding firm at last week's quotations. The Texas Co. was one of the large buyers during the past week.

TEAGLE CITES CAUSES OF OVERPRODUCTION

(Continued from Page 139)

fore, the value of the straight-run gasoline would seem to be influenced by the cost of the substitute gasoline, amounting to 30 per cent of the total, produced by cracking fuel oil.

Natural Gasoline Factor

Coincidentally with the development of the cracking process, the industry had also evolved methods for the recovery of gasoline from casinghead and natural gases at a cost approximately the same as that of producing gasoline by cracking fuel oil. By these two methods alone it is estimated that during the coming year the industry can produce more gasoline than its entire output during 1918.

The influence of this all-important evolution on the quantity of crude oil needed to meet the gasoline requirements has not been appreciated by the industry. We have continued on the assumption that the value of petroleum was based primarily on its straight-run gasoline content, which—from the experience of the previous five years—would justify the same general level of prices. We failed to realize that the two new factors in our situation—the contribution of cracking and casinghead recovery—were in effect tending to displace straight-run gasoline as the controlling product of crude.

I am convinced that the industry has overlooked the important fact that fuel oil has become the most formidable competitor of crude oil in the production of gasoline. This means that so long as there is a surplus of fuel oil, the value of straight-run gasoline over any considerable period of time cannot be higher than the cost of gasoline obtained from cracking, plus a reasonable profit, for just so long as there is a surplus of fuel oil and the price of straight-run gasoline is higher than the cost of gasoline obtained from cracking, more pressure stills will be built. Had these facts been understood, I am confident that the industry would not have continued in the belief that the general conditions during the past two years were not essentially different from those existing when gasoline was only obtainable in its natural state from the distillation of crude, and when prices, following the increase in demand, invariably advanced during the summer months. In the expectation that each summer would bring a demand for gasoline that would require not only the current production, but also exhaust the finished stocks accumulated during the winter, the refiners bid up the price of crude oil. As a result, we have in the past two years witnessed the extraordinary situation of prices reaching their highest level during the period of lowest consumption, and their lowest level during the period of highest consumption.

Average Cost of Crude

Perhaps the industry would not have gone on producing so much oil destined to be sold as fuel oil if it had been possible to arrive at an average cost of crude oil at the wells, and to use this cost as the basis of the posted prices. The customary method of making a price to the consumer on the basis of the cost of the raw material, plus transportation, manufacturing and marketing expense, is not applicable to the petroleum industry. In fact, production costs have varied so widely as to make an average estimate the wildest of a guess. I need not emphasize to an audience of oil men the fact that a price that might net a satisfactory return to an owner of flush production would be too low to make the operation of small pumping wells profitable.

The stocks of crude oil in storage are one of the major problems of the industry. We start with the fact that these stocks were accumulated primarily in anticipation of a shortage and at costs higher than the prices of crude which have prevailed most of the time, or that prevail today. It was the natural expectation that in time of shortage these stocks could have been disposed of at cost, if not at a profit. The shortage has not occurred and it has therefore been impossible to draw upon them at cost. However, the purpose for which these stocks were accumulated, and the fact that a return of cost or a profit was not contemplated except in the event of a shortage has sometimes been forgotten, and it has often been said that crude prices would advance sharply, and would remain on higher levels because the owners of these stocks could not afford to draw on them at less than cost. This misconception may have resulted in new drilling which otherwise might not have been started. It implies a control of prices which is impossible in a competitive industry like the oil business. Individual necessities of some purchasers, however, at times have rapidly carried crude prices by successive advances of 25 cents per barrel to levels approximating the cost of the crude in storage. The producers, being misled by these prices started new drilling and increased stocks. Thus the problem of stocks was not solved, but aggravated.

Fuel Oil and Prices

One of the economic functions of stocks should be to prevent violent fluctuations in price. They should be used to level off the high places and fill up the low ones, thus creating stability and certainty rather than lending instability and uncertainty to the situation. Sound crude prices cannot be founded on the cost of crude in storage, but upon what a highly competitive industry can obtain for its products. For example, more than half of the product content of the crude in storage is fuel oil. Irrespective of its cost, this fuel oil content cannot, under existing conditions, be sold for more than the price obtainable in competition with coal.

I am not predicting the future level of either crude or gasoline prices. These will be dependent in part on what is realized for fuel oil, and the situation of the industry will be improved as the use of fuel oil in competition with coal is decreased and its uses for superior purposes further developed. These superior uses can be expanded with confidence, because it is not a near possibility that the industry will reach a point where no fuel oil will be available. For some years to come we should be able to obtain sufficient fuel oil from the production of fuel crudes and the residue from refining and cracking operations to be able to meet the economic demand for this product. By "economic demand" I mean the amount of fuel oil that can be sold at

(Continued on Page 147)

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Sulphur Deposit and Plant
Gulf, Matagorda County, Texas

DEVELOPING MODERN CRACKING EQUIPMENT

(Continued from Page 140)

to a preheating coil, where the oil is heated to about 350 degrees Fahrenheit, and thence to the furnace. The oil passes downward through the upper bank of these tubes to a lower bank, then upward through the lower bank, the oil reaching a temperature of 800 to 900 degrees Fahrenheit, which is recorded in the pump house. The heating is accomplished by fire burning in the combustion chamber underneath the lower bank of tubes and flames are prevented from touching the tubes by means of a specially designed perforated arch. The pressure maintained prevents the oil from vaporizing at this temperature. The oil continues to flow from the furnace through transfer lines to the reaction chamber, where the conversion of the oil into gasoline is accomplished, accompanied by a slight drop in temperature and a deposition of the carbon that always forms in cracking operations.

End of the Operation

No external heat is applied in this reaction chamber, which, however, is heavily insulated to prevent loss by radiation. In the reaction chamber the converted oil is allowed to escape through a valve whereby the pressure is controlled on the system just described. This is the end of the cracking operation. The desired conversion has been accomplished and about 30 per cent of gasoline is now present in the oil. The subsequent treatment is simply a separation of the synthetic crude into the fractions desired. This is carried out in towers and by atmospheric distillation and fractional condensation. Fuel oil or residuum separates in the first tower and gas oil in the second tower. Benzine containing the gasoline which was formed in the reaction chamber leaves a second tower as a vapor, which is condensed into a liquid in the cooling coil beneath, whence it flows to the gas separator. Here the non-condensable gases are separated from the liquid and are returned to the furnace for fuel, no other fuel being required under normal operation after the cracking is once started. Likewise the liquid benzine flows from the gas separator to the storage tank and the fuel oil and gas oil from the towers have been cooled and delivered to storage. The fuel oil that separates in the first tower has a gravity of 16 to 20 degrees Baume, zero cold test, and a viscosity corresponding to that of light oil distillate. The gas oil separated in the second tower is practically the same as the original charging stock and is used over again, preferably in a mixture with new charging stock.

Approximately 50 per cent of the original charging stock is returned for the recycling, and the ultimate yield of gasoline is thereby increased to 60 per cent and upward. The operation of the unit is continued for 6 to 25 days, when it is necessary to shut down and clean out the coke from the reaction chamber. Fine carbon is also removed from the furnace tubes.

Dubbs Process Described

Another type of equipment that has received a great deal of publicity and is also quite generally accepted both in this country and abroad is that of the Universal Oil Products Co., of Chicago.

The oil charged to the system is pumped at a uniform rate either directly to the heating coil in the furnace or to the dephlegmator, where it is preheated by the condensing vapors, or to both simultaneously as regulation requires. The oil enters at bottom of the heating coil and passes upward through 50 4-inch tubes 30 feet long connected into a continuous coil by steel fittings. Here it is heated to the required temperature before it is discharged through a transfer line to the top of the reaction chamber, which is heavily insulated. The cracking is completed within the reaction chamber without the application of additional heat. The vapors from the reaction chamber pass to the dephlegmator and the residuum is drawn off, cooled and run to storage, while the coke re-

(Continued on Page 148)

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CHICAGO DISCUSSES STOCKS AND PRICES

(Continued from Page 126)

rather easy at 4½ cents for 41-43 gravity with occasional days when there seems to be a better tone but so far these have been temporary. Exporters have taken something for their storage when the prices were favorable.

Furnace Oil Held Back

Distillates or furnace oils have continued to be held back by the continued mild weather and the movement is rather light. In fact there is little doing except on contracts where the prices were low. In such cases the distributors have taken the minimum quantities to keep their contracts in good shape. There have been occasional sales by refiners at below their recent quotations but these transactions have been special and the amount of business done has not been sufficient to make any real change in refinery markets. In some cases the refinery wanted storage for other products or for crude. In other cases there was a necessity for a reduction of inventories but generally the market is holding quite well when the delay in the repeat movement is considered. Burner manufacturers report the installing of burners continues at a rapid rate. The discussion of the proper oil for burners is also a continuous performance but necessity is bound in time to force the burner manufacturers to turn out burners that will work successfully on the kind of oil that can be had in largest quantities.

Fuel Oil Advancing

Fuel oil is still advancing slowly, not so much on the large demand as on the limitations put by refiners on the supply. The demand here from the industries lags. One active tank car marketer of fuel oils with a large following stated that one day he sold 15 cars to as many customers, all single car lots.

Another marketer said in selling one particular lot of fuel oil of 180 cars the largest order was for 20 cars and the average order was very low. The industrial business is not increasing by leaps and bounds as some expected. One of the steel companies sent out inquiries for large requirements over the first four months of 1925. When the order was finally placed it was more than cut in half and the statement was made by the purchasing agent that the immediate outlook for business was not such as to justify them in purchasing in such large quantities. Several large users of fuel oil have turned to coal. It is reported one of the largest packers is about to do so. They claim they cannot pay over $1.10 a barrel for fuel oil when good mine run, steam coal can be bought delivered at $3 a ton and less. One marketer is of the opinion that if 200 cars were thrown on the market it would break prices to at least $1.05 a barrel. While the offers are light there have been quiet indications that some refiners would consider concessions in price if they could obtain immediate movement. What they want in some cases is an opportunity to store more crude. They seem to feel there is more certainty of a crude advance than of an increase in the price of fuel oil. The market here is quoted as $1.12½ to $1.17½ and sales have been made at the latter figure although the bulk of the business is being done at $1.15 in small lots. There have been sales to marketers from marketers at $1.10 and in some cases as low as $1.05 it is known, but these sales have been small in quantity. On the other hand the prediction is freely made fuel oil will go to $1.25 by Christmas and some refiners are quoting $1.20 for immediate delivery and $1.25 over December. In one case at least they have no oil to offer except what they buy on the outside.

Gas Oil Slow

Gas oil continues to drag along with the market showing a little better tone one day and not so good the next. There seems to be a lack of demand, explained by the statement that refiners are not cracking gas oil, and rather large consumption for this purpose is now missing. It is hard to understand the position of a refiner who offers his gas oil at 2⅞ cents and wants a price of $1.20 for fuel oil. It does not seem reasonable and in the long run the gas oil will advance or fuel oil will go down. There will be more of the burning oils made as the refiners increase their runs to fill their gasoline demand. They are sure to do it. It does not matter so much that Cosden and similar plants are running to capacity. It is the little skimming plants, not the refiners with cracking stills, that add the bulk of the fuel supply. Not being continuous performers they have no large contracts but must sell to refiners with such contracts or in this or a similar market. As a matter of fact the bulk of the surplus fuel and gas oil after the railroad and local industries are supplied is sold through Chicago houses and the present supply is adequate to the present demand. This demand is expected to increase with the opening of the new year but there will be a limit to the quantity that will be absorbed.

Lubricants in Rut

Lubricating oils are still rather in a rut. There is a lot of inquiry and there will be some good business done but the demand cannot be hurried. The export deliveries are said to be improving and have done so ever since Germany and France secured their loans. There is some doubt as to the good business judgment in furnishing competing people with working capital but this is offset by the thought they will be a source of orders for our products as wells as competitors for our foreign trade. One or two large contracts have been placed or rather renewed and the outlook is for an improvement in consumption locally as well as abroad.

Tank Wagon Unchanged

The announcement, "No change in the tank wagon markets" is becoming as monotonous as "All quiet on the Potomac." The prediction is freely made now there will be no change in tank wagon or crude prices during the few weeks of this year. The expression is heard that the big companies will take whatever loss may accrue to them in decreased inventories and make it good next spring. Some say that after March 4, 1925, will be a better time to alter existing conditions. The refiner with a marginal contract and the jobber without such contracts or even with the new form and rate is anxious for an advance. Their plea for even an advance of 1 cent on gasoline is almost pathetic. The local tank wagon market, except as a matter of form, is 13 cents, and if any jobber can make a profit on a margin of 2 cents it must be his business is done entirely through filling stations or with large consumers and he can add some profits on lubricating oils and other products to make good his slender margin on gasoline. There are some large contracts with renewal privileges that have margins rangings from 5 to 6½ cents and such jobbers must congratulate themselves if they kept these contracts alive by taking the goods last summer. In the larger towns the distribution of gasoline is stated to be holding up very well but there are large sections where the demand is very much less. The northern parts of the Standard Oil Co. (Indiana) territory are of course doing very little. Many autos that used up the gasoline in the Northern woods during the summer are now on their way or arrived in Florida and California.

SURPLUS TO SOON REACH VANISHING POINT

(Continued from Page 35)

Pacific Coast for every pound of fuel and every gallon of oil which we can control to supply our future demands for motive power, and second, because the heavy investment of California companies in transportation, refinery and marketing facilities requires an adequate return in price to compensate them for the investment and the risk involved in the construction of these facilities.

I imagine that all of the Mid-Continent and Eastern operators who have shared with us in the troubles caused by California overproduction, will be glad to hear this statement. We expect to get back through the price received for our stored oil, the cost of the oil itself, the cost of tanks and reservoirs which may never again be in use, the carrying charges including both interest and evaporation losses, and also expect to make some profit for ourselves.

High Cost of Storage

To put this into definite figures—Oil which we have placed in storage in the last three years is largely held in tanks and reservoirs constructed in this period at an approximate cost of $40,000,000. New pipe lines, terminals and other facilities required for handling both the stored oil and the increased shipments which resulted from over-production, have cost an equal amount of money, and the expenditure for new facilities was therefore at least $80,000,000. Add to this the cost of oil placed in storage, and there is in California a new investment of over $150,000,000, largely made from new capital obtained by the issue of bonds or stock. This investment should be returned to California companies from the sale of the products of the stored oil.

This brings up directly another point which affects the entire industry and is worthy of note at this meeting since a great part of the business sessions are devoted to a study of cost accounting as applied to the production, transportation, refining, distribution and sale of oil.

Our industry begins its cycle of operations with a search for an underground supply of crude oil from which commercial production can be secured. It depends for its very foundation on the limited underground reserves from which future output can be obtained. This foundation is limited in two ways:

1. From the fact that reserves are exhaustible and cannot be renewed, and
2. From the fact that while individual reserves may be duplicated and new rich fields discovered, this form of renewal requires the continued reinvestment of so-called earnings and a continued call for new capital.

Billions Invested Yearly

The total investment in the oil industry in the United States runs into billions of dollars and the requirements each year for new capital also reach a substantial figure.

In the excitement of the oil business and the rush of new development and new construction, I believe that American oil companies have overlooked the cumulative effect of two factors which affect earnings:

1. The steadily increasing investment in the industry.
2. The increased cost of the discovery of new fields and of the production from old properties.

For this reason, I believe that the rates applied to the depreciation of equipment in the oil industry have been too low. These low rates of depreciation have led us to deceive ourselves and to carry on our books earnings and surplus accounts which do not actually exist.

It is time that all executives of oil companies should frankly realize two fundamental facts:

1. The entire investment of the industry can be returned to the original investors only through the sale of petroleum products.
2. A true profit cannot be secured in any step of the operation until this original investment has been returned.

This applies equally to the drilling of an oil well, to the construction of a pipe line, to the erection of storage, building or refineries, and to the investment in terminals, tankers and distributing stations.

This idea of complete return of cost before computing profit is not in accord with the accounting practice in the oil industry and probably appears as an impossible suggestion to accountants and auditors, but from a practical standpoint, it must be realized that the socalled earnings of oil companies are not actual profits, but in a large part a partial return of invested capital. The capital assets of an oil company, insofar as they include construction costs and are represented by completed equipment and facilities, are only paper assets which will be wiped out in a large measure by a decline in production and exhaustion of reserves.

The oil inventories and the oil reserves of individual companies and of the nation have been won at a great risk and through an enormous investment. In all justice to stockholders of these companies and in fairness to the consumer of oil products, the industry should receive for its products a price entirely commensurate with this risk and this investment.

HENRY M. DAWES TO BE PRESIDENT PURE OIL CO.

Henry M. Dawes has resigned as comptroller of the Currency and the President has announced his resignation will be accepted. Mr. Dawes will become president of the Pure Oil Co. and Beaman G. Dawes will step from the presidency of the company to a new place created by the board as chairman of the board of directors.

Henry Dawes comes from the Marietta family of Dawes and has been more or

Henry M. Dawes

less active in the oil business since 1900.

There will be no other changes in the executive personnel of the Pure Oil Co.

The Pure Oil Co. is the oldest of the largest independent oil companies in the United States and under its present management has become one of the most important of the oil companies. It is a producer, transporter, refiner and marketer of oil. Its properties are valued at upwards of $200,000,000 and it has a most enviable dividend record.

KANSAS FIELDS

(Continued from Page 42)

34-2 Nathan & Brinn are drilling at 350 feet in No. 2 Goff, C NW NE NW, Section 20-34-4; No. 2 Jarvis is shut down at 630 feet.

T. B. Slick's No. 1 Conrad, C SE SE NW, Section 19-32-3, the west offset to the discovery well, was drilling at 365 feet; the southwest offset, Slick's No. 1 Waite, NE cor. NE SW, Section 19-32-3, is spudding at 40 feet. The Marland Refining Co.'s No. 1 Tinker, NE cor. NE SE, Section 26-32-3, is drilling at 1,370 feet; No. 5 Graham, SW cor. SE NE, Section 9-33-3, is being rigged up; No. 1 Bower, SW cor. NE SE, Section 10-33-3, got a water sand at 2,560-2,565 feet, and a 10-bbl. show of oil at 2,565-2,584 feet, and was drilling at 2,695 feet in shale.

Anderson and others completed No. 1 Smith, C SE SE, Section 21-29-9, Elk County, for 8,500,000-foot flow of gas in sand at 1,525-1,545 feet. The Arkansas Fuel Co.'s No. 1 Perkins, C SW SE, Section 28-29-9, got sand at 1,496-1,545 feet with a flow of 4,750,000 feet of gas.

The Brown-Woodward Oil Co.'s No. 1 Shelton, SE cor. Section 26-15-2w, Saline County, was drilling below 200 feet.

TEAGLE CITES CAUSES OF OVERPRODUCTION

(Continued from Page 143)

sions not solely dependent on the cost of coal. East of the Rockies the problem is to find an economic outlet for fuel oil at a price which will return to the refiner at least the cost of his crude. West of the Rockies, fuel oil, as already stated, is not directly competitive with coal. The fuel oil content of the various grades of California crude is the base in determining the posted prices which have been graded in accordance with their naphtha content. So that the suggestion of applying the value of the fuel oil content is neither new nor revolutionary.

Correcting Misunderstanding

I am firmly convinced that a more satisfactory market for fuel oil can be developed by the industry. I have not maintained that we must have cheap crude as long as coal entered into competition with fuel oil. If time permitted I would like to discuss why the refiner continues to regard the demand for fuel oil as only an outlet for his surplus. No one can tell how far-reaching will be the trend toward the displacement of coal for household use by furnace oil. There are those in this audience who believe that the industry can well afford to spend millions for the purpose of popularizing furnace oil, sold not in competition with coal, but on the basis of its intrinsic value. They are convinced that when the public knowledge of the manifold advantages of furnace oil has become general, and equipment and distribution facilities developed, consumers will be willing to pay a price which will justify producing and running crude for the market thus created. There are other ways of establishing fuel oil on a higher market plane, and any increased price should be reflected in crude values.

If it is true that the industry has underestimated the importance of fuel oil as a factor in the price structure, the question naturally arises as to the relationship of this factor to the production of crude. The answer appears to lie in the general recognition of fuel oil as the best single index we have today of the conditions existing between supply and demand. When the supply of fuel oil is so large as to force upwards of 150,000,000 bbls. in a single year into competition with coal, it should be plain that overproduction exists. Any price that encourages the uneconomic use of oil should be a warning to the producer.

Must Avoid Another Flood

Even now we may be following the same path traveled at this time in the past two years, and is it not apt to lead us to the same condition in which we found ourselves in the two successive summers? During the past few weeks, the consumer demand for crude has apparently been in excess of the daily supply, and some slight draft has been made on reserve stocks. Premiums are being offered, and if precedent is followed, posted prices may be advanced to meet them. A posted price that would stimulate drilling might increase production and thus force the industry to continue on a fuel oil basis. A price for fuel oil under existing conditions so high as to materially curtail its consumption would have the same effect as an increase in crude production. If there is anything the industry does not need or is not going to need next summer it is another flood of oil.

If, following the precedent of the last two years, posted prices are bid up, then the industry must consider whether it is justified in accumulating stocks of finished products at such higher cost in anticipation that at least this higher price level will continue throughout next summer. In consideration of this question the industry may repeat the mistakes of the past two years if it ignores the effect that gasoline made by cracking will exert upon the price structure. There is a sermon for us in Judge Beaty's story of the blind mule, which ran head-on into a post—not because he didn't know it was there, but because he just didn't give a damn.

Questions Higher Prices

The company with which I am associated may question the wisdom of higher prices for crude at the present time. If, however, there should be a general advance, it will be difficult for us not to follow because of our traditional policy to pay the producer from whom we are currently purchasing as much as any other buyer of the several grades of crude. No company is strong enough to act alone. There is no better answer than this to the old myth that any company or group of companies is dominant in the industry. The industry is made up of units of all sizes, from the lone producer running a single string of tools, a distributor operating a single service station or tank wagon, to the larger aggregations of capital engaged in every branch. It is intensely competitive in every activity.

The history of the past two years has taught us that there is no easy road to success. Competition has so increased operating costs as to materially curtail profits. The excessive bonuses paid for acreage are perhaps the most outstanding example of the increase in overhead costs, and these and other factors serve to pyramid the cost of production.

Upon the other aspects of the problems of production at the present time, it is not necessary for me to dwell, as they are all familiar to you, and I believe that it is unnecessary for me to say that in this resume of what I consider to be an evolution in the industry I am not announcing any new policy or procedure of the Standard Oil Co. (New Jersey) in respect to the purchase of crude. Whatever changes may come must necessarily be the result of an appreciation of the situation on the part of the whole industry. We have a common problem and a common responsibility. We are all in the same boat, and our interests are mutual in a matter of pure economics such as this. My effort this afternoon is only an attempt at constructive thought, offered to you in the confident belief that when the wisdom and experience of the industry are brought to bear upon the problems confronting it, we shall soon find their solution.

WILLIAM HOFFMAN DIES

OIL CITY, Pa., Dec. 8.—William H. Hoffman, president of Drake Memorial Association from the time of its foundation, died at his home in Baldwinsville, N. Y., today. He was 79 years old and was one of the pioneers in the oil industry and was well known in all the oil fields. Mr. Hoffman lived his earlier life at Butler, Pa., moving to Baldwinsville some time ago.

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DEVELOPING MODERN CRACKING EQUIPMENT

(Continued from Page 144)

mains in the chamber until the end of run, when the ports are opened.

The temperature of the vapors leaving the dephlegmator is largely controlled by the proportion of cool charging stock introduced therein and hence the properties of the distillate taken off and the reflux oil that returns to the heating tubes for further cracking. The light vapors pass to a condenser and thence to the pressure distillate receiver. At this receiver the operator regulates the discharge of gas and distillate by means of suitable valves, which thus control the pressure on the system. The early Dubbs units, of which there are said to be only two in existence, have a rated capacity of 250 bbls. each. All of the newer units have a standard rating of 500 bbls. daily throughput. As a matter of fact, this rating is based upon a maximum yield of gasoline and in the event it is desired to get a greater throughput with a lesser percentage of gasoline, a much greater amount, even up to 1,000 bbls or more per day, can be run through the installation with a large total yield of gasoline, but, as indicated above, a smaller percentage return. A recent addition to the standard Dubbs equipment of nominal cost increases the above throughput per day by approximately 50 per cent. As shown by official reports of the company and from experience with the equipment, the Dubbs plant will turn out better than the average yield of 40 per cent of gasoline on the basis of the daily throughput. Much larger yields than this have been secured on certain grades of stock.

Wide Ranges of Stock

One of the interesting features claimed for the Dubbs equipment is the wide range of charging stock that may be employed. It has been operated on all classes of stock, from light kerosene distillate to Panuco crude. The length of runs with the Dubbs equipment is based chiefly upon when the reaction chamber becomes filled with coke. One 10x15-foot chamber will hold from 30 to 35 tons, and in some plants, where it is expected to operate upon heavy charging stock, two such chambers are installed for one cracking unit. When running upon light gas oil or kerosene distillate, naturally the percentage of coke is proportionately very small and therefore the runs can be extended to 20 or 30 days.

Simplicity of operation and safety are two of the important factors in the Dubbs equipment. In a 500-bbl. plant, only 10 to 12 bbls. of oil is actually in the heating zone at one time. In the reaction chamber there would be an additional 20 to 25 bbls. but this is outside of the fire zone and cannot siphon directly to the coils. Operating pressure is not in excess of about 140 to 160 pounds per square inch. In all properly arranged tube equipment it has been shown that the amount of coke deposited on the tube is extremely small and hence the actual danger from any accident to a tube with any reasonable care is almost eliminated.

There is a great flexibility permitted in the use of the Dubbs equipment because of the wide range of charging stock and varying rates at which these charging stocks can be run, depending upon what products are desired. It is possible to crack up the charging stock and re-run so as to produce practically nothing but gasoline and coke, or one may make gasoline, gas oil, fuel oil and coke in varying proportions as conditions and the market require. The coke produced by this means is a good commercial fuel and is marketable for a number of purposes in case it is not used in the plant.

Difficulty in Comparing Yields

As previously indicated, it would seem that the only fair way to compare the yields from different processes is by the daily throughput. There have been many modifications of this which have mostly caused confusion in the minds of those it was desired to impress. One interesting fact should be pointed out: a great similarity between the actual yields from different equipments for one throughput unless there is some facility for reflux-

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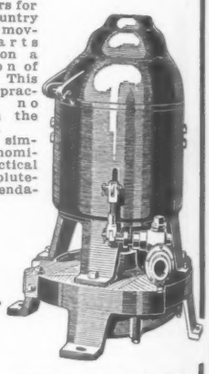

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ing within the system whereby the proportion of gasoline contained has been increased. This undoubtedly is due largely to the more or less reversibility of the reactions involved in the cracking of gasoline and consequently, if the conditions approximate one another, the yields of gasoline must necessarily be approximately the same. However, this does not argue that one equipment is equivalent to another, because there are very great differences in the method of handling and the safety of the system and ease of operation and there are involved a great many different conditions. In processes, however, in which there is actually secured in one throughput a larger percentage of gasoline than in another, as is the case with the Dubbs process, it is due to better and more efficient methods and equipment for constantly refluxing the material without allowing it to pass out of the system. In other, words, any equipment that makes simply a synthetic crude is naturally limited in the percentage of gasoline possible to make and it is only by this constant refluxing that it is possible to increase the yield from one throughput.

Design of Fleming Equipment

The Fleming cracking process is the invention of Richard Fleming and is now controlled by the Richard Fleming Co. of New York.

The first plant was installed at the Martinez refinery of the Shell Co. of California and was put into operation in May, 1920. It is now understood that this plant has been shut down for some time. The following description of the process was supplied by the maker of the equipment, the M. W. Kellogg Co. of New York.

The still proper (see Fig. 2) is a forge-welded steel drum, 10x30 feet, set on end in a furnace. The shell is 1 inch and the head 1⅛ inch ain thickness. Four burners are used, set tangentially to the shell to give the gases from combustion of the fuel oil a swirling motion about the shell. The furnace is designed so that the entire circumference of the still, except for a very few feet bottom and top, is swept by the flue gases which leave the setting only 100 to 150 degrees Fahrenheit hotter than the contained oil. From the still the vapors pass to a dephlegmator. Here the feed going to the still meets the hot vapors, condensing the heavier fractions and carrying them back into the still. A novel feature is a bypass on this bleed-back line through a coil, water cooled, from which it may again pass through the dephlegmator, thus aiding in the control of the outlet temperature.

The vapors leaving the dephlegmator are condensed in an apparatus of the jet type. The arrangement is such that a needle-type valve releases the vapor between the two cones of water. It should be noted that the still pressure is maintained up to the needle valve, but that in the throat of the condenser itself there is no pressure—in fact, readings taken show a slight vacuum. Thus one piece of apparatus serves as a water-cooled relief valve and condenser. The combined water and condensate are led through a separating tank, where the water is drawn off, and the fixed gases may here also be exhausted, the condensate thence flowing to the receiving tank proper. The losses compare favorably with other processes and demonstrate that there is no appreciable absorption of the gas by the water. The scrubbing effect of the water is also valuable, aiding materially in cleaning up the distillate and reducing later treatment. The removal of the sulphur compounds in this way is a favorable feature of the apparatus. Other features of special interest are: the mechanical reliability of the equipment; the fact that there are more than 2 square feet of heating surface per barrel of charge, and that there are no horizontal hot surfaces for carbon accumulation.

Original Charge

The still is operated on the batch and feed, or semi-continuous principle. The original charge is 295 to 300 bbls. and during the run 250 to 400 bbls. of additional stock is fed to the still. The

(Continued on Page 152)

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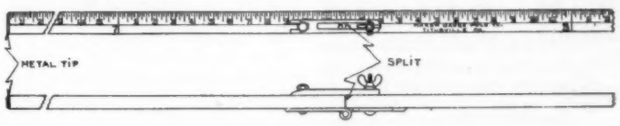

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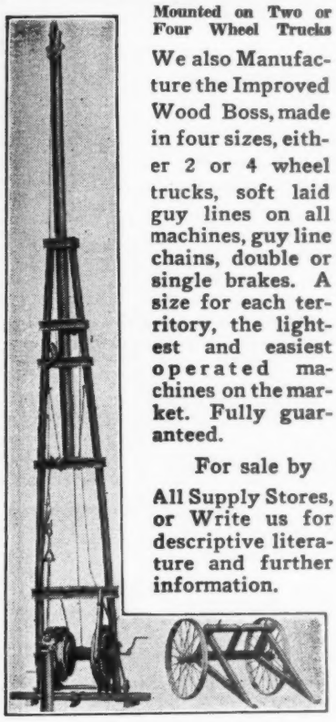

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DRESSING AND TEMPERING OF STEEL BITS FOR USE IN THE OIL FIELDS

By Francis B. Foley
Lucey Manufacturing Corp., Before American Petroleum Institute

To say that equipment and methods in vogue in tempering bits in the field are quite inadequate for the production of good tools is merely to repeat what has been said very many times before.

The furnaces generally in use throughout the oil fields are not designed in such a manner that their temperature can be easily controlled, even though a pyrometer were used in measuring the temperature. The atmosphere in the furnaces is oxidizing, so that the carbon is removed from the outside of the steel during heating, the result being that the thin edge of fishtail bits is sometimes rendered unfit for hardening. The Bureau of Mines first undertook a field study of bit dressing and hardening. Fortunately, the salt bath with temperature control was at that time being introduced into the oil fields. Simple as the salt bath method of heating is, it very soon was clothed with mystery. Many thought that some extraordinary properties were bestowed on steel which had been subjected to the influence of the molten salt, as though some chemical reaction took place between the salt and the steel or that something from the salt bath entered into the steel. Nothing could be farther from the fact.

One of the essentials of a successful salt bath is that it shall not react with the metal. The purpose of a salt bath is to provide a liquid bath which will give a uniform temperature in which the steel can be heated out of contact with the air. The temperature of a bath of this kind can be easily controlled and can be read by means of a thermo-couple placed in the bath and connected with a temperature indicator. Steel heats somewhat more rapidly and uniformly in a liquid bath than in the ordinary type of furnace and the heat can be confined to that portion of the steel only which is submerged. The use of salt baths for heating steel is not at all new but has been in vogue for many years. Steel which is heated for hardening in the usual type of furnace is quite apt to scale. The scale is iron oxide produced by the reaction of the oxygen in the air entering the furnace with the iron in the steel. The oxygen will first reaact with the carbon at the surface of the metal and when that has been removed the oxygen combines with the iron, producing scale.

By heating steel in a salt or lead bath the oxygen of the air is prevented from coming in contact with the steel and the surface is thus protected from decarburization and scaling. For years salt and lead baths have been used for heating of parts which must be kept free from scaling. The mixture of salts which makes the particular bath now being used for hardening fishtail bits is known commercially as Lavite.

Manufacturing Problems

The manufacturer of bits—I shall deal here particularly with fishtail bits— is in a rather trying position from the point of view of bit steel composition. He strives for two things, which may be consistent one with the other. In the first place he wants to satisfy the driller in producing a steel which will make the hole with a minimum of wear and consequent redressing. That, in itself, is not so difficult an undertaking were it not for the second requisite that the metal be extremely tough in order to minimize the possibility of breakage and twistoffs which cause fishing jobs. These two properties do not go hand in hand in an untreated forging. The steel which is least apt to break off at the pin is not likely to be one which will have maximum drilling efficiency, and the forged bit which would give maximum speed and endurance in removing ground may be brittle. However, experiments conducted at the plant of the Lucey Manufacturing Corp. show conclusively that if the forging is subjected to a complete heat-treatment consisting of a quenching and drawing, steels having good drilling properties can be rendered tough and the chances of breakage reduced to a minimum.

Important advances in the manufacture of fishtail bits will no doubt follow along these lines and still more efficient drilling bits will be the result. With different treatment the same steel which makes a satisfactory rear end axle for an automobile is also made into a satisfactory gear, and it follows that with a different treatment the steel which will give a hard relatively nonabrasive cutting edge can also be made to give satisfactory service in the pin where toughness is the most essential property.

While the manufacturer is striving for a foolproof bit steel, one that will withstand considerable abuse in the way of temperature at the hands of the field smith, it is not the part of the field smith to take every advantage of the range of temperature. No matter how foolproof a steel may be, there is a right and a wrong way of heat treating it. In the foolproof steel the smith may get away with the wrong way of tempering the bit without serious trouble to the driller, but he is doubtlessly sacrificing drilling qualities in so doing. A bit made of wrought iron would be rather foolproof after a fashion in that it would not break, but it would not make hole.

Quenching Bits

There are certain bits, classed as oil quenching, which might give better results if quenching were done in water and the bits subsequently drawn at a low temperature. Possibly better results would be obtained from all steel now used were they quenched in water and drawn. The danger is in the possibility that some of the steels which are designated as oil quenching might be cracked if attention were not paid to overheating. Undoubtedly the greatest danger of cracking comes from overheating and even without temperature measuring devices there is really no excuse for it. One of the earmarks of a good smith is his ability to estimate temperature by his eye alone with a reasonable degree of accuracy—skilled smiths owe much of their success to their ability in this direction. It isn't necessary to allow steel to go stone cold in the quenching bath in order to have it harden and it is always safer to remove the steel from water while there is sufficient heat in it to dry the water off the outside in a couple of seconds after the bit has been removed from the quenching bath. The steel will then be at or just under the boiling point of water.

N. LOUISIANA-ARKANSAS

(Continued from Page 43)

oil in 7 feet of sand at 2,302 feet in No. 4 Stringfellow, Section 28-15-16; Leon and others are drilling at 1,750 feet in No. 2 Berg, Section 4-16-15.

The Mazda Oil Co. is rigging up to drill No. 1 Berry in Section 23-15-15.

Webster Parish

Marked activity has followed the completion of recent wells in the Cotton Valley district, the absence of water and the high quality of oil in the new wells, proving an incentive for further development.

The Alabama Petroleum Co. tested dry at 2,515 feet in No. B-1 Pardee, Section 24-21-10, and is arranging to re-test at 2,524 feet. In the same section, derrick is up for No. B-2, 10-inch casing has been set at 450 feet in No. A-3, derrick is up for No. A-4 and location made for No. A-6. No. 1 Ramsey, Section 19-21-9, is drilling at 850 feet, derrick is up for No. 2 Ramsey in the same section, and No. 1 Smith, Section 29-21-10, is drilling at 1,760 feet.

The Fortuna Oil Co. is rigging up to drill No. 1 Crichton in Section 19-21-19, and is drilling at 1,650 feet in No. 4 S. J. Merritt, Section 14-21-10.

In the Springhill district, the Arkansas Fuel Oil Co. is drilling at 840 feet in No. 1 Frazier, Section 27-23-11, and Belchic & Laskey at 200 feet in No. 6 Pine Woods Lumber Co., Section 33-23-11.

Bienville Parish

The Roxana Petroleum Corp. has set 10-inch casing at 200 feet in its test on the Bryan lease in Section 30-17-6, between Gibsland & Bienville and 20 miles south of the Homer Field.

Bossier Parish

The Atlantic Oil Producing Co. is down 100 feet in No. 2 Bodcau, Section 24-23-12, in the north end of Bossier Parish, near where Estes and others recently got a 15-bbl. pumper.

Caddo Parish

In the Pine Island district, the Dixie Oil Co. has set 6-inch casing at 1,415 feet in No. 3 Louisiana State, Section 13-21-15, and the Fortuna Oil Co. is drilling at 2,160 feet in No. 13 Doan-Thigpen, Section 3-20-15.

In the Caddo ake district, The Texas Co. is running a core barrel at 2,986 feet in its deep test on the Federal Jeems Bayou lease in Section 15-20-16.

La Salle Parish

The Bur Ban Oil Co. had a showing of oil with a lot of salt water at 2,000 feet in No. 2 Urania, Section 21-11-2e, and is trying to mud off the salt water. The test is located 5 miles north of Urania.

Winn Parish

Operations have been resumed in the test in Winn Parish, situated about 10 miles northeast of Winnfield, where Galloway & Arrendale are drilling at 925 feet in No. 1 McCarty, Section 5-12-1w.

Columbia County, Arkansas

Most of the wells drilling in Columbia County are wildcat tests, the only company now operating in the field proper being the Magnolia Petroleum Co., which tested dry with a show of oil at 2,165 feet and at 2,190 feet in No. 2 Watson, Section 36-15-20, and will drill deeper.

The Ky-Ark Petroleum Co. has derrick up for an interesting test on the Peter Doss land in Section 29-19-20, between the Haynesville Field and Magnolia, Ark. Another test in this region will be made by the Magnolia Development Co., which has derrick up for No. 1 Phil Lindsay in Section 30-18-19, 10 miles southeast of Magnolia.

Five miles west of Magnolia, Moore and others have set 6-inch casing at 3,160 feet in No. 1 Fullenweider, Section 12-17-22, and 2 miles further west F. R. Maier and others have derrick up for No. 1 Garrett in Section 15-17-22.

LaFayette County

Just north of the Louisiana State line, in Section 3-20-24, the Ken-Saw Petroleum Co. is rigging up to drill No. 2 Red River Land Co.

Lincoln County

Cambrian and others are drilling at 1,850 feet in No. 1 fee, Section 3-9-8.

Gaines and others are drilling in red shale at 2,785 feet in their deep test on the Goodrun Timber Co. lease in Section 15-13-29.

Nevada County

The Keystone Oil Co. property in Nevada County has been taken over by the Southern Oil Co. which drilled to 20 feet in its test on the Mass lease in Section 7-14-20 and is now closed down.

The Ouachita Valley Oil Co. is drilling at 1,415 feet in No. 1 Phillips, Section 30-14-20. Smitherman-McDonald are drilling at 2,198 feet in No. 3 Womack, Section 10-14-21, and have set 10-inch casing at 40 feet in No. 3 Drake in the same section.

Zing and others are drilling at 1,055 feet in No. 1 Graves, Section 22-10-23.

DEATH OF J. C. M'KINNEY

OIL CITY, Pa., Dec. 8.—James Curtis McKinney, banker, oil man and former mayor of Titusville, died there yesterday, aged 80. He entered the oil business in 1864, drilling his first well at Foster, below Franklin, and with his brother, John L. McKinney, operated at Pleasantville, Franklin, Parkers Landing and in the Butler fields. He became general manager of the Midland division of the South Penn Oil Co., which position he held until he resigned in 1916. He was also a director of the Penn Gas Co.

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COMPLAINANTS AND INTERVENORS TESTIFY

(Continued from Page 122)

ly with refining interests in Kansas, and that while it was a fact most of the quotations on refined oil were made on a basis f.o.b Group Three in both Oklahoma and Kansas, yet at times it was possible for the Kansas refiners to underbid the Oklahoma refiners and take advantage of their freight rate differentials to thus control the business.

Similar testimony was introduced by Eugene Constantin of Wichita Falls, in behalf of the complainants in docket 16066 to show most of the quotations and prices were made f.o.b. Group Three; also to show the refining industry in North Texas was restricted gradually to western trunk lines territory by competition which was forcing them from the Pacific Coast and Western States; also by refining interests located along the Atlantic seaboard and controlling the business in Eastern districts on cheap short-haul rates from Atlantic seaboard ports. Mr. Constantin also testified that the North Texas refining industry was not securing its full proportion of the export shipments, and that all these facts, taken into consideration were being restricted from year to year to the Western trunk line territory. He further testified that if any increase was made in the present differential of North Texas over Oklahoma and Kansas, that such increase would have to be absorbed by the North Texas refining interests and would eventually eliminate North Texas from the industry.

E. P. Byars Witness

At the Fort Worth hearing Ed P. Byars, representing North Texas refiners, presented his direct testimony, but was not cross-examined at that time. Most of Friday was occupied with the cross-examination of Mr. Byars in a general way. At the conclusion of his cross examination he presented another exhibit to illustrate that the greater volume of traffic moving from the State of Oklahoma moves from the northeast part of that State, and that the greater volume of traffic moving from the State of Kansas moves from the southwestern part of the present Kansas group.

The time Saturday was occupied by testimony offered by the Ardmore interests and the interests from Ranger and Breckenridge, Tex. Henry Hauseman, traffic manager for the Pure Oil Co. at Ardmore, Okla., introduced several exhibits to show the increased volume of traffic in the Western trunk line territory from the Ardmore district since the extension of Group Three as it now exists to include Ardmore. Mr. Hauseman also introduced exhibits to show the Ardmore refiners were being eliminated from other sections and their competitive conditions were similar in some ways to those of the North Texas group, and that they were even excluded from certain territory where the North Texas refiners were now able to dispose of a part of their output. Mr. Hauseman also called the commission's attention to the fact that the question of pipe line transportation had not been given serious consideration in the case so far, and this was a very important factor to be taken into consideration in rate making on petroleum and its products, stressing that large volumes of petroleum products were moving in the pipe lines at present and how the railroads were now losing a large volume of tonnage, and that any increase in freight rates would only tend to increase the pipe line movements and decrease the cerriers' tonnage of petroleum products.

C. L. Seideman, traffic manager of the Imperial Refining Co., with a refinery at Ardmore, Okla., and shipping from other points in territory now under consideration, introduced testimony and evidence similar to that presented by Mr. Hauseman.

E. A. Starr, traffic manager Texas & Pacific Coal & Oil Co., appeared as a witness in behalf of the Breckenridge-Ranger Group, and introduced several exhibits showing a comparison of the present groups and proposed groups, also the relationship between North Texas and the Ranger-Breckenridge Group. It was Mr. Starr's contention traffic conditions had considerably changed since the Mid-Continent case and other more recent decisions and due to extension of various lines into the Ranger-Breckenridge Group, the traffic from that group could not be handled by shorter routes, and the group should be given more favorable consideration in rate making than in the past.

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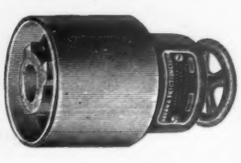

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Commission on Oil Of Cabinet Members Suggested by Work

WASHINGTON, D. C., Dec. 6.—Creation of a permanent Federal Oil Commission with a view to conservation was recommended by Secretary Work in his annual report.

"The production of oil from the public lands, exclusive of naval petroleum reserves, amounted to nearly 40,000,000 bbls. during the year, from which the Government obtained nearly 8,000,000 bbls. of royalty oil, valued at slightly more than $12,000,000," he said.

"Of this sum, 90 per cent was returned to the States, either directly or through the Reclamation Service, and the remaining 10 per cent went to the Federal Treasury to cover the cost of supervision. The actual cost is about one-third this amount, the remainder being available for general expenses of the Government. Supervising the production and gauging of the 40,000,000 bbls. cost the Government only $250,000.

"The formation of a permanent Federal Oil Commission, to include the Secretaries of War, Navy, Interior and Commerce, to study the conservation of our oil deposits and more thorough and economic methods of recapture, to be comprehended in a national continuing oil policy, is an urgent necessity in the interests of the public.

"The Geological Survey has been of great assistance to bureaus of the Interior Department and to Federal and State Governments. Their survey and investigation of mineral resources in Alaska was effectively prosecuted during the year and promises invaluable data on the resources of that territory. The geologic and topographic survey of naval petroleum reserve No. 4 in northern Alaska was carried well toward completion during the fiscal year by engineers of the survey."

DEVELOPING MODERN CRACKING EQUIPMENT

(Continued from Page 149)

first is for heavy gas oil or that containing a percentage of bottoms, while the latter figure may be expected from clean overhead stock such as Pennsylvania fuel oil.

The cycle will vary with the character of the stock charged. The still is on stream from 40 to 60 hours, the time being determined by the carbon deposition. To relieve pressure, steam, cool and clean requires 24 hours, making a total of 64 to 84 hours.

While relieving the pressure it is possible to utilize the contained heat in the still and setting to take off a second cut which will correspond closely to the original stock and may be used for recycling. The large amount of contained heat in the brickwork in the setting, together with the large heating surface, enables this step to be taken and eliminates re-running of bottoms necessary with other systems. By operating in this way, net yields of 50 to 60 per cent of gasoline from the charging stock are possible. On the basis of daily throughput the yield of gasoline is about 35 per cent. For average conditions of operation the apparatus may be rated at 70 bbls. of New Navy gasoline per unit per day from 200 bbls. of gas oil or charging stock. This figure includes idle time for relieving, cooling, cleaning, charging and getting up pressure.

The fuel consumption will average about 8 per cent of the throughput. A figure of 4 per cent has been attained when the fixed gas has been utilized as auxiliary fuel. This equipment is considered as a gas oil equipment, but at some of the installations a heavier overheated stock, such as wax distillate, is being charged into the equipment in connection with the ordinary gas oil charge.

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RED RIVER HEARINGS TO UNTANGLE SITUATION

GRANDFIELD, Okla., Dec. 6.—The Secretary of the Interior has fixed December 10 for hearing applications of the principal placer mining claimants in Red River for awards of oil-producing areas included in that section of the river being held by the Interior Department by transfer from Frederick Delano, formerly receiver. Before that date four other groups of claimants will have been disposed of. Practically all producing wells in the disputed area are in the 50 group and the Government holds about $3,000,000 to be distributed to the concerns receiving awards.

A claim in behalf of the State of Oklahoma for 37½ per cent of the Government's one-eighth royalty of the oil production from disputed lands along the Red River between Oklahoma and Texas and a further claim to 3 per cent of the gross production since the lands have been held in receivership, were laid before officials of the Interior Department by George F. Short, Attorney General of Oklahoma.

Oklahoma claims 37½ per cent of the Government's one-eighth royalty from the oil production on the south bank of the Red River by virtue of the Federal law giving the State that per cent of the Government's royalty from mineral production from Government-allotted land. The terms of the original allotments, according to Mr. Short, also provided that the allottees should pay any legal tax on the mineral production of the lands, which, in Oklahoma, is 3 per cent of the gross.

The Attorney General of Oklahoma will request a conference between Attorney General Stone, representatives of Texas, and himself, to arrive at a stipulation of facts regarding the disputed western boundary of Oklahoma, which Texas claims is approximately half a mile too far west. Thirty thousand acres of land are involved.

The United States Supreme Court has granted the State of Texas authority to prepare a statement showing the amount of gross production oil tax and ad valorem tax due it from the receiver in the Red River boundary case.

Some oil companies having wells along the Red River in the vicinity of the disputed area, as well as under the receivership, have paid to Texas part of the gross production tax out of the receivership area, and investigations will be required to ascertain the quantity on which the tax is yet to be paid. The State will collect probably $1,000,000 oil tax and ad valorem State taxes for the entire period of the receivership.

MISSOURI HEARING JANUARY

ST. LOUIS, Dec. 6.—The Missouri Supreme Court has set the State anti-trust ouster suit against Standard Oil Co. of Indiana, charging monopoly of oil cracking processes and restriction of competition, for hearing during the January call of court. The term of office of Attorney-General Jesse W. Barrett, who instituted the suit and has been endeavoring to have the court dispose of the case before he retires, will then have expired. Attorney-General Elect Robert Otto, assistant under Barrett, has announced he will carry the case through as planned.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, DECEMBER 18, 1924, BY U. S. GOVERNMENT

December 18, 1924, at Pawhuska, Oklahoma, about 30,000 acres will be offered for oil leases in quarter sect.on tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual instalments, with acceptable security. Within advertised area there are about 9,200 oil wells producing from one barrel to two thousand barrels each, the total daily production for September, 1924, being about 100,000 barrels; also there are about 150 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

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Detailed Operations in All Fields for Month of November

SUMMARY OF ALL FIELDS

Field—	Comp.	Prod.	Dry	Gas
Eastern	358	1,247	49	71
Lima	51	595	6	7
Central Ohio	74	318	14	49
Indiana	16	282	3	0
Kentucky	165	2,425	53	8
Tennessee	3	1,050	1	0
Illinois	14	595	6	0
Kansas	92	6,126	42	7
Oklahoma	358	94,970	95	56
North Central Texas	205	22,584	82	9
East Central Texas	24	17,291	5	1
Gulf Coast	72	18,843	29	3
Southwest Texas	22	1,666	10	2
Louisiana-Arkansas	71	17,159	19	17
Wyoming	57	6,450	6	1
Montana	13	1,387	2	0
Utah	1	0	1	0
New Mexico	3	95	0	0
Total November	1,599	193,083	423,231	
Total October	1,524	154,646	373,185	
Difference	65	38,437	50	46

Rigs and Wells Drilling

Field—	Rigs	Drg.	Ttl.
Eastern	189	441	630
Lima	4	60	64
Central Ohio	25	91	116
Indiana	1	17	18
Kentucky	7	191	198
Tennessee	2	19	21
Mississippi	6	20	26
Alabama	0	11	11
Georgia	1	4	5
Illinois	2	23	25
Kansas	80	312	392
Oklahoma	188	1,044	1,232
North Central Texas	60	315	375
East Central Texas	29	79	108
Gulf Coast	44	109	153
Southwest Texas	44	85	129
Louisiana-Arkansas	74	212	286
Wyoming	83	277	360
Montana	13	107	120
Utah	2	26	28
New Mexico	2	22	24
Total November	856	3,465	4,321
Total October	868	3,798	4,666
Difference	12	333	345

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. The rigs and wells drilling are set forth in similar manner. In lines where the Section Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Washington	17	115	6	4
Nowata-Rogers	9	5	5	3
Osage	51	10,177	11	8
Tulsa	26	359	8	7
Okmulgee	21	635	8	5
Seminole	73	50,182	0	1
Okfuskee, Hughes & McIntosh	17	10,765	5	0
Muskogee and Wagoner	18	45	12	4
Creek	42	3,639	13	5
Pawnee	13	4,090	2	0
Kay	12	10,025	3	3
Payne	1	75	0	0
Lincoln	3	0	1	2
Garfield-Noble	5	2,635	2	0
Carter	18	1,750	4	3
Stephens-Cotton	9	0	5	4
Miscellaneous	23	473	10	7
Total November	358	94,970	95	56
Total October	300	79,321	78	40
Difference	58	15,649	17	16

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Osage County	19	87	106
Tulsa	10	28	38
Okmulgee	13	42	55
Seminole	28	154	182
Okfuskee, Hughes and McIntosh	36	112	148
Muskogee and Wagoner	5	29	34
Creek	21	97	118
Pawnee	5	47	52
Payne	4	14	18
Lincoln	4	35	39
Kay	14	84	98
Garfield-Noble	5	86	91
Carter	7	48	55
Stephens-Cotton	6	31	37
Miscellaneous	11	150	161
Total November	188	1,044	1,232
Total October	175	1,142	1,317
Difference	13	92	85

WASHINGTON COUNTY

17-25-14 Fee, W. S. Tuyman 1 ..... dry
18-26-14 Code, T. E. Rice 2 ..... dry
4-26-13 Kane, D. M. Tyler 2 ..... gas
8-23-13 Little, Tuloma Oil 1 ..... gas
6-23-13 Halsell, C. R. Hill et al 1 40
19-28-13 Gaun, D. M. Tyler 1 ..... gas
27-28-14 Guffay, A. J. Smysor 1 5
18-28-14 McGinnis, W. L. Cushenberg et al 13 ..... dry
23-29-13 Sullivan, C. H. Pittman et al 1 25
35-25-13 Flint, Chas. Farzuhenson 2 ... 5
6-23-13 Holshell, The Texas Co. 9 .... dry
18-25-13 Butts, J. B. Olmstead 1 10
5-26-13 Wilkins, D. M. Tyler 1 ..... gas
7-25-14 Greenwood, W. H. & C. F. Mosley 11 5
31-23-13 Unknown, C. R. Hall et al 1.. 25
24-29-13 Goodwin, A. McBride et al 1.. dry
34-28-13 Thompson, Lambert Oil 1 .... dry

Wells completed	17
Production	115
Dry	6
Gas	4
Gas production	15,750,000

OSAGE COUNTY

21-20-11 Sand Springs Home 2 200
31-21-12 Barnsdall Oil 26 45
34-21-12 J. R. Hadley 2 5
19-25- 8 Oliphant et al 2 ..... gas
21-25- 8 Mid-Kansas Oil 689 45
11-27-5e Phillips Pet. 14 800
13-27-5e Carter Oil 6 200
18-27-6e The Texas Co. 6 450
28-20-11 Gray et al 5 400
11-27-5e Phillips Pet. 2 350
Phillips Pet. 4 200
26-27-5e Phillips Pet. and Skelly 7 75
18-27-6e The Texas Co. 7 400
17-27-11 Price Oil 1 ..... gas
27-29-11 C. K. Dresser 8 10
9-21-9e McKinney & Page 2 ..... dry
20-23-8e Red Bank Oil 4 ..... dry
4-28-12 Owen Osage 304 ..... dry
10-25- 9 Watchorn Oil 1 ..... dry
10-27-11 Owen Osage 302 ..... dry
31-29-12 A. D. Simons 1 ..... dry
24-21- 9 Alcorn Oil 1 ..... gas
36-22- 8 Sand Springs Home 72 ..... gas
14-22-10 Osage Arrow 8 125
21-23- 8 Beacon Oil 2 30
1-24-11 A. M. Landon 1 15
11-27- 5 Phillips Pet. 5 800
Phillips Pet. 9 1000
Phillips Pet. 10 900
Phillips Pet. 12 1500
13-27- 5 Carter Oil 10 250
14-27- 5 Phillips Pet. 10 200
Phillips Pet. 12 100
Phillips Pet. 16 100
18-27- 6 Phillips Pet. 6 800
10-27-11 Owen Osage 305 ..... gas
27-29-11 Beacon Oil 5 125
26-27- 5 Phillips & Skelly 15 ..... dry
19-28- 9 Wiser Oil 1 ..... dry
29-21-12 Okla. Nat. Gas 645 ..... gas
30-21-12 Elliott & Smith 3 22
Fairmont & Gillespie 11 400
15-24- 8 I. T. I. Oil 326 ..... gas
34-25-11 I. T. I. Oil 328 ..... gas
11-27- 5 Phillips Pet. 3 75
Phillips Pet. 6 600
13-27- 5 Carter Oil 9 5
18-27- 6 Phillips Pet. 8 250
5-21-11 Hornicker et al 2 ..... dry
25-24- 9 Wanona Oil 2 ..... dry
34-25- 8 Mid-Kansas Oil 1 ..... dry

Wells completed	51
Production	10177
Dry	11
Gas	8
Gas production	28,000,000

TULSA COUNTY

5-19-12 Grayson, Echo Oil 10 ..... gas
29-19-12 Postoak, Gladys Belle Oil 2-A. 75
31-19-12 Keefer, Stebbens Oil 8 ..... gas
14-18-14 Coleman, Osen Arrow Gas 3 .. gas
33-18-14 Haikey, Sax & Fox Oil 3 25
1-17-14 McHenry, Frates Oil 2 50
McHenry, Hall et al 3 ..... gas
10-17-14 Childers, Pettit et al 1 5
5-19-12 Partridge, Thompson & Black 2 65
Partridge, Shaffer O. & R. 2.. 30
3-19-11 Josey, Sand Springs Home 1.. dry
2-18-13 Beaver, Thompson & Black 1. dry
5-19-12 Partridge, Echo Oil 1 35
6-18-12 Gray, Gypsy Oil 10 ..... gas
22-19-10 Timothy, Holmes et al 1 ..... dry
6-19-12 Woodward, Sand Springs Home 3 ..... dry
1-18-14 Presley, Broken Arrow Gas 2. dry
26-17-12 Coleman, Boulstreet Oil 1 .... dry
1-17-14 McHenry, Waite & Findley 2. dry
6-20-13 Wilson, M. Ellis et al 6 ..... dry
24-22-13 Backward, Sanders Oil 3 2
1-20-13 Komma, Schermerhorn Oil 1 .. gas
16-21-13 Vann, Tidal Oil 5 50
6-20-14 Walker, Schermerhorn Oil 1.. gas
36-21-13 Blakemore, Superior Oil 1 12
36-19-12 Unallotted, Jenson & Harris 1-A 10

Wells completed	26
Production	359
Dry	8
Gas	7
Gas production	21,000,000

OKMULGEE COUNTY

8-15-12 Chase, Sheridan Oil 1 ..... gas
14-13-11 Wood, Gibson & Zahniser 3 ... 35
7-12-12 Wilson, A. D. Morton & Co. 1.. 315
3-15-11 Grayson, Webster et al 5 35
31-12-12 Denison, Simms Pet. 3 100
29-14-12 Gill, Henry Oil & Amerada Pet. 1 ..... dry
35-16-12 Gillette, Peer Oil & Riverland Oil 1 ..... dry
21-14-14 Morris, Roxaline Oil 6 ..... dry
13-11-13 Konrad, E. Morgan 2 ..... gas
32-14-14 Rentie, W. A. Settle 3 ..... dry
19-13-13 Lee, Acta Oil 3 15
26-15-13 Sugar, S. A. Vollentine 1 .... gas
1-12-12 Vurson, Beans & Wilder 1 .... dry
15-13-14 Scott, Utah Oil 12 25
3-15-11 Grayson, Webster et al 6 20
Sallee, Sheridan Oil 2 90
18-11-12 Fish, Phillips Pet. 1 ..... gas
23-15-11 Kimble, J. J. Shock et al 1 .... dry
8-11-12 Sumner, Gillette & Kerr 1 .... dry
36-12-13 Bruner, Pulaski Oil 7 ..... gas
17-14-13 Berryhill, C. S. Willmot 4 ... dry

Wells completed	21
Production	635
Dry	8
Gas	5
Gas production	23,800,000

SEMINOLE COUNTY

9-10- 8 Bunner, Pure Oil 4 80
10-10- 8 Brown, Carter Oil 1 880
Little, McMan Oil 3 800
Berryhill, Kingwood & Sinclair 1 751
Berryhill, Kingwood & Sinclair 4 229
15-10- 8 Tiger, Snowden & McSweeney 2 530
Harjo, Cosden Oil 2 670
16-10- 8 Baker, McMan Oil 1 1100
Baker, McMan Oil 2 1400
36- 8- 7 Cunsah, W. R. Ramsey 1 580
31- 8- 8 Salinda, P. & R. Corp. 1 90
32- 8- 8 Perryman, Shaffer O. & R. 2.. 75
Perryman, Shaffer O. & R. 3.. 600
9-10- 8 Bunner, Pure Oil 2 120
Bunner, Pure Oil 5 850
Bunner, Pure Oil 8 30
Bruner, Gardner & Carter Oil 3 475
Bruner, Gardner & Carter Oil 4 110
Hill, Sinclair Oil 1 1230
Hill, Sinclair Oil 3 240
10-10- 8 Brown, Burk Greis Oil 4..... 270
15-10- 8 Stidham, Gypsy Oil 4 25
16-10- 8 Proctor, Gilliland & Livingston 4 30
Baker, McMan Oil 3 1400
Baker, McMan Oil 4 2160
17-10- 8 Bruner, Cosden Oil 1 602
9- 9- 8 Grayson, Kingwood Oil 1 .... gas
31- 8- 8 Amos, Ramsey 1 1170
Amos, P. & R. Corp. 1 540
Willis, Boggs Oil & Sykes 5... 700
32- 8- 8 Parker, Dixie Oil 2 393
Perryman, Shaffer O. & R. 4.1000
4-10- 8 Dunn, Central National Oil 1..1959
Fixico, Laurel Oil 1 132
9-10- 8 Bruner, Transcontinental & Sinclair 2 1400
Bruner, Transcontinental & Sinclair 3 2100
Bruner, Transcontinental & Sinclair 5 1600
Hill, Sinclair Oil 4 2453
Hale, Gypsy Oil 1 311
Hale, Gypsy Oil 4 860
Hill, Carter Oil 2 1700
10-10- 8 Brown, Roxana Pet. 6 1281
Brown, Roxana Pet. 7 500
Brown, Roxana Pet. 8 150
Berryhill, Roxana Pet. 1 115
Berryhill, Kingwood & Sinclair 2 232
15-10- 8 Willis, Cosden Oil 4 120
Tiger, Cosden Oil 2 150
16-10- 8 Roberts, Carter Oil 1 30
Roberts, Carter Oil 3 419
17-10- 8 Bunner, Tidal Osage Oil 1 25
31- 8- 8 Willis, Boggs Oil & Sykes 4.... 300
32- 8- 8 Walker, Dixie Oil 2 256
Tiger, Magnolia Pet. 2 385
4-10- 8 Dunn, Waite Phillips Co. 1 ...1200
Jackson, Cosden Oil 1 1000
Jackson, Cosden Oil 2 1246
9-10- 8 Bruner, Transcontinental - Sinclair 4 1923
Bruner, Transcontinental - Sinclair 8 1440
Bruner, Gardner & Carter Oil 6 82
Starr, Amerada Pet. 1 93
Hill, Carter Oil 3 1600
Starr, Carter Oil 1 180
Starr, Carter Oil 2 629
Starr, Carter Oil 3 1034
10-10- 8 Brown, Carter Oil 3 155
15-10- 8 Tiger, Roxana Pet. 1 50
16-10- 8 Bruner, Gypsy Oil 7 50
Proctor, Waite Phillips 2 150
21-10- 8 Harjo, Tidal-Osage Oil 4..... 10
31- 8- 8 Amos, P. & R. Corp. 2 1200
8-10- 8 Buckner, Prairie Oil 1 600
Buckner, Prairie Oil 2 1872

Wells completed	73
Production	50182
Dry	0
Gas	1
Gas production	14,000,000

OKFUSKEE, HUGHES AND M'INTOSH COUNTIES

36-12-10 Gray, Atlantic Oil 1 650
36-12-10 Fisher, C. L. McMahon et al 1. 340
14-10- 8 King, Tidal Osage Oil 1 2980
35-10- 9 Dunn, McMahon et al 1 ..... dry
13-11-11 Barnett, Waite Phillips Co. 5. dry
18- 9- 9 Brown, Magnolia Pet 2 75
9- 9-11 Holt, Tidal Osage Oil 3 50
Lucey, Tidal Osage Oil 1 90
17- 9- 9 Brown, H. F. Wilcox Oil 2 .... dry
3-11-11 Meyers, W. B. Pine 3 12
4- 9-11 Byrd, Magnolia Pet. 3 270
19-12-14 Batts, Sanda Pet. 1 ..... dry
35-10- 9 Sand, T. B. Slick 1 3003
4- 9- 9 Carter, E. L. Robinson & Amerada 3 1355
4- 9-11 Coachman, Tidal-Osage 1 140
17-11-10 Dunson, E. R. Black & Turman Oil 1 ..... dry
35-10- 9 Westbrook, Prairie Oil 1 1800

Wells completed	17
Production	10765
Dry	5
Gas	0

MUSKOGEE AND WAGGONER COUNTIES

35-18-15 Edwards, E. H. Kime 1 ..... dry
2-18-16 Kelly, J. L. Towner 1 ..... dry
33-15-18 Garrett, H. L. Jolly 4 5
11-17-16 Birney, Young & Johnston 1 . 40
17-17-16 Sugar, A. E. Carder 1 ..... gas
Sugar, Skelly Oil 1 ..... gas
27-14-15 Durun, E. C. Robinson 4 .... dry
17-18-18 Davis, Denton & Marshall 1 .. dry
2-17-17 Posey, A. Williams 1 ..... dry
18-17-16 McIntosh, Perry & Hartman 2. gas
25-17-16 McIntosh, Oklarado Oil 1 .... dry
30-17-16 Childers, O. A. Sewell 1 ..... dry
17-17-16 Mission, Knox & Shouse 1 .... gas
35-15-16 Lee, Hutchinson 9 ..... dry
18-16-20 Ross, J. L. Haner 1 ..... dry
10-17-15 Friday, W. P. Horn 1 ..... dry
34-18-15 Roberson, Greathouse 1 ..... dry
33-18-16 Marshall, Schoolty 3 ..... dry

Wells completed	18
Production	45
Dry	12
Gas	4
Gas production	23,500,000

CREEK COUNTY

25-15- 7 Bigpond, Lima Oil 1 ..... gas
17-15- 8 Roberts, Eastern Oil 6 20
34-15- 8 Yarhola, C. G. Tibbens 6 10
11-17-10 Unallotted, Wilcox & Witton 1 gas
8-16-12 Townsite, Wilson & Glasgow 1 840
Monroe, Riverland Oil 12 350
32-14-10 Walker, Cosden Oil 2 400
29-15- 9 Smith, Gadler et al 1 ..... dry
13-19- 8 Ross, Shaffer Oil 2 10
2-14- 8 Davy, J. W. Henry 1 70
13-14- 8 Sewell, C. G. Tibbens 5 10
8-16-12 Townsite, S. W. Anthony et al 1 10
Townsite, A. B. Ice et al 1 .. 25
Townsite, Suppes et al 1 20
Townsite, Henry Oil Co. et al 1 35
Townsite, Antlers Oil 1 100
8-16-12 Townsite, Henry Oil et al 1... dry
Townsite, Jackson & Wise 1 .. 10
3-16-10 Fee, J. H. Fisher et al 1 .... dry
Townsite, Jordan & Ashley 1.. dry
13-15-10 Thompson, Enfisco Oil 2 .... dry
16-14-10 Bear Waite Phillips Co 2 .... dry
7-14- 7 Coosar, Twin State Oil 1 60
13-14- 8 Bearhead, C. G. Tibbens 1 140
19-17- 9 Strip, Delmar Prod et al 1 .... gas
35-17-10 Bucktrot, H. C. Wilson 1 .... gas
6-16- 9 Hill, Purdy et al 1 57
2-18-11 Collins, Riverland Oil 1 ..... dry
16-15-10 Roofner, Link Oil 3 ..... dry
7-14- 7 Bartlett, Prairie 1 35
14-17- 8 Johnson, Aztec Oil 2 120
32-17- 8 Arbuscee, Sartain Brothers 3.. gas
6-16- 8 Willis, Olean Petroleum 2.... 35
2-15- 8 Henneha, Wilcox Oil 10 972
17-18- 9 King, H. W. Bartlett 2 15
35-16- 9 Horner, U. S. Cities Oil 2 15
7-16-12 Maxwell, J. H. Hilt 1 250
18-17- 9 Harjo, Bu-Vi-Bar Oil 1 ..... dry
9-16- 9 Childress, Comar Oil 3 ..... dry
8-16-12 Townsite, Woodburn et al .... dry
17-14-10 Johnson, Gladys Belle Oil 1 .... dry
McNevins, Waite Phillips Oil 1 dry

Wells completed	42
Production	3625
Dry	11
Gas	5
Gas production	36,500,000

PAWNEE COUNTY

16-20- 6 School, Privett & Sloan 1.... 75
8-20- 7 Fleming, Twin State Oil 2 300
Fleming, Twin State Oil 3.... 415
17-20- 7 Townsite, Clifford et al 1 200
Pettit, T. E. Mann et al 2 610
8-20- 6 Lawrence, Magnolia Pet. 2 .... dry
33-23-3e Miller, Watchorn Oil 6 1015
4-22-3e Miller, Magnolia Pet. 5 795
17-20- 7 Townsite, Clifford et al 2 200
8-20-10 Unknown, Shaffer & Mankins 1 30
14-20- 9 Bean, Jones Holmes & Brown 3 dry
16-20- 6 School land, Jim Glenn Oil 3. 60
17-20- 7 Townsite, Reese et al 3 220

Wells completed	13
Production	4000
Dry	2
Gas	0

KAY COUNTY

16-27-1w Slocum, Ostot Dev. Co. 1 .... gas
34-25-1w McKee, Wentz Oil 29 3631
34-25-1w Woods, Amerada Pet. 30 ..... dry
10-27-1w Crouch, Blackwell Oil 1..... gas
17-29-1w Brokhouser, Vernon Oil 2 .... gas
27-25-1w Suiter, McMann Oil 3 ..... dry
34-25-1w Suiter, McMan Oil 3 ..... dry
34-25-1w Woods, Amerada Pet. 36 1560
Endicott, Pennok Oil-3-D 3427
McDaniels, Blackwell O. & G. 4-C 1822
McDaniels, Blackwell O. & G 7-B 550
35-25-1w Endicott, T. B. Slick 1-A..... 15
14-25-1e Harris, O-Kansas Oil 1 ..... dry

Wells completed	12
Production	10025
Dry	3
Gas	1
Gas production	103,500,000

PAYNE COUNTY

18-18- 5 Harlow, Carter Oil Co. 1 75

LINCOLN COUNTY

9-14- 6 Thomas, Prairie Oil 1 ..... dry
1-15- 6 Bowers, McMan Oil 1 ..... gas
18-14- 5 Wilson, Jennings Brothers 1.. gas

Wells completed	3
Production	6
Dry	1
Gas	2
Gas production	26,000,000

GARFIELD AND NOBLE COUNTIES

3-24-1w Ruzek, Blackwell Oil 4-C.... dry
21-23-1w Forman, Walters Oil 1 ..... dry
24-22-4w Walker, Sinclair Oil 25 40
30-22-3w Crews, Sinclair Oil 7 30
2-24-1w Shawver, Gypsy Oil 84 2565

Wells completed	5
Production	2635
Dry	2

CARTER COUNTY

25-2s-3w Galiger, Wirt Franklin 5 175
34-1s-3w Parnell, Southern Pet. 1 ..... dry
23-2s-3w Smith-Davis, C. R. Smith 2... 150
5-3s-2w Williams, Merrick & Kirk 1 .... gas
Apple - Franklin, Wirt Franklin 2 60
16-4s-2w Schellenburg, Carter Oil 1.. 45
20-5s-1e Farve, Amerada Pet. 17 200
28-6s-1e Clay, Amerada Pet. 1 .....
28-1s-3w Jennings, Templeman & Frantz 1 75
Gregg, Humble Oil 1 225
30-3s-1w Brown, Prairie Oil 1 ..... dry
23-2s-3w Lohman, Magnolia Pet. 3 .... gas
Davis, Twin State Oil 2 50
29-1s-3w Spears, Humble Oil 1 ..... dry
33-5s-1e Cassidy, American Pet. 1 .... dry
27-1s-3w Loftis, Levant Oil 1 50
28-1s-3w Parsons, Tidal Oil 1 147
16-4s-2w Cruce, Magnolia Pet. 19 .....

Wells completed	25
Production	1750
Dry	4
Gas	3
Gas production	21,500,000

STEPHENS AND COTTON COUNTIES

13-1s- 9w Schove, Magnolia Pet. 1.... dry
10-2s- 7w Selby, Gant & Frantz 1 .... gas
22-1s- 8w Reynolds, Winkler et al 4.... gas
5-2s-10w Wiley, Malernee et al 4..... dry
23-1s- 8w Schick, C. & O. Drlg. Co. 1.. dry
22-2s-11 Ballard, Continental Dev. 2.. dry
22-2s-10 Adams, Knox & Garvin 1.. dry
25-1s- 9w Cox, Carter Oil 2 ..... dry
26- 2s-11 Fox, Jack Shaffer 2 .....

Wells completed	9
Production	0
Dry	4
Gas	5
Gas production	25,500,000

MISCELLANEOUS

Beckham County—
29- 9-23 Baker, Crovery & Cordell 1.. dry
Grant County—
22-27-3w Lane, Blackwell Oil 1 .....

11-26-6w Bonaham, Tyberant, Broadhurst & Foster 1 ..... dry
5-26-6w Asher, C. J. Wrightsman 1 ... dry
12-25-6w Vollmer, Meyers Oil 1 ..... dry

Grady County—
22-5n-5w Farwell, American Drg. Co. 5. gas
25-5n-5w McCaughtry, Carter Oil 1.... gas
25-5n-5w McCaughtry, Hagerline et al 1 gas
25-5n-5w McCaughtry, Stogner et al 1 .. dry
25-5n-5w McCaughtry, Atlantic Oil 1.. gas

Pontotoc County—
23-5n-5e Burk, Roy Carter et al 2.... dry

Caddo County—
11-5n-9w Hedlund, Briscoe & Hall 4... dry
Hedlund, English Drlg. Co. 4.. 40
Lackey, Lone Star Gas 4 40

Garvin County—
9-1n-3w Purnell, T. P. C. & O. Co.... 75
16-1n-3w Mauldin, Magnolia 4-A 13
14-1n-3w Mays - Newberry, Magnolia Pet. 3 ..... gas

Comanche County—
25-1n-9w Hines, Kidney et al 3 ..... gas

Sequoyah County—
13-11-25 Ralph, W. A. Radley 1 ..... gas

Rogers County—
13-24-16 McComb, Tony Pearson 1 ..... dry
27-22-16 Murphy, A. E. Lynch 3 ..... dry
9-24-16 Barnett, Central Union Oil 1 .. dry
13-23-15 Viles, Scott & Rhuems 1 ..... gas
12-24-16 Douglass, C. S. Hummel et al 17 dry
13-23-15 Dawson, Scott & Rhyems 1.. gas

Nowata County—
15-25-16 Zelgar, Frasier & Smith 1.... 5
26-26-17 Lamb, B. Dunn 4 ..... gas
10-25-17 Chatman, Sagamore Oil 1.... dry

SOUTHERN OKLAHOMA

Love County—
17-5s-1w McCluskey, Humble Oil 1.... dry

Bryan County—
11-6s-9e Combs, Lyons et al 1 ..... dry

Jefferson County—
14-6s-5w Seay, Carter Oil 1 284
1-7s-6w Seay, Humble Oil 1 ..... dry

Wells completed	32
Production	478
Dry	15
Gas	10
Gas production	92,250,000

OSAGE COUNTY

Rigs

25-21-10 Titus et al 1.
28-21-10 Sheirich et al 2.
6-21-11 Titus et al 8.
27-22- 8 Acacia Oil 2.
24-22-10 Tidal Osage Oil 9.
10-23- 8 Superior Oil 1.
13-23- 8 Twin State 6.
19-23- 8 Red Bank Oil 6.
24-24- 9 Tidal Osage Oil 13.
16-24- 9 Tidal-Comar Oil 3.
33-24- 9 Peters Petroleum 5.
27-25- 8 Atlantic Oil 5, 6.
19-27- 6 Phillips Pet. 10, 14.
18-27- 6 Texas Co. 10.
16-28- 9 A. M. Landon 10.
14-28-10 Jackron & Wise 1.
17-22-11 Owen Osage 307.

Wells Drilling

21-20-11 Sand Springs Home 3.
29-20-11 Gray Oil 6.
29-20-11 Sand Springs Home 2.
19-21- 9 Phillips Petroleum 2.
23-21-10 Titus et al 3.
27-21-10 Markham & Breene 1.
30-21-12 Barnsdall Oil 17.
16-22- 8 Sand Springs Home 82.
4-22- 9 Peters Petroleum 8.
29-23- 8 Red Bank Oil 10-B.
29-23- 8 Red Bank Oil 5.
4-23- 9 C. B. Peters 1.
5-23-11 C. K. Dresser 1.
Owen Osage Oil 306.
13-24- 4 Douglas Oil 1.
15-24- 8 Marland et al 4.
30-24- 9 I. D. Simons 1.
12-25-10 Barnsdall Oil 17.
5-24-11 Grace Maxwell 2.
12-25- 5 Midland Oil 1.
21-25- 8 Mid-Kansas Oil 3.
28-25- 8 E. B. Lawson 10, 11.
28-25- 8 Gypsy Oil 1.
29-25- 8 Texas Co. 8, 9, 10, 11, 12.
Lewis Oil 2.
19-25- 9 New England Oil 11.
30-25-12 Beacon Oil 3.
16-26- 6 Carter Oil 11, 12.
10-26-11 Knupp et al 1.
26-26-11 Olean Petroleum 2.
11-27- 5 Carter Oil 11, 12, 13, 14, 15, 16.
Phillips Petroleum 7, 8, 11, 15.
13-27- 5 Carter Oil 8, 11, 12.
14-27- 5 Phillips Petroleum 11, 15.
25-27- 5 Phillips and Skelly Oil 10.
26-27- 5 Mid-Kansas Oil 8.
Skelly Oil 3.
Phillips & Skelly Oil 13.
25-27- 5 Skelly Oil 2.
18-27- 6 Phillips Pet. 5, 7, 9, 13.
Texas Co. 3, 5, 8, 9.
23-27- 5 Seamans et al 2.
16-27-10 Owen Osage Oil 286.
17-27-10 Presbury et al 3.
17-27-11 Price Oil 1.
25-28-10 Owen Osage 303.
14-29-11 J. R. Hadley 13.
34-29-11 I. T. I. Oil 1.

Shut Down

6-20-10 Gwynupp et al 1.
13-21-10 T. B. Slick 1.
6-21-11 Titus et al 7.
21-21-12 Barnsdall Oil 25.
15-22-10 Foster & Alexander 1.
34-22-10 Tidal Osage Oil 38.
4-23-10 Rex Pyramid Oil 1.
D. Slingluff 2.
26-24- 8 H. V. Foster 36.
23-24- 9 H. V. Foster 43.
31-25- 7 Vickers & Higgins 1
10-25- 8 Henderson & Holden 5.
28-25- 8 E. B. Lawson 9.
34-25- 8 Marland Oil 1.
1-25-11 Robinson et al 5.
30-27-12 A. M. Landon 1.
Rigs, 19; wells drilling 87; total, 106.

TULSA COUNTY

Rigs

4-19-10 Lindsey, Steele et al 1.
5-19-12 Partridge, Shaffer O. & R. 3.
Grayson, Echo Oil 5.
Partridge, Thompson & Black 3.
5-19-12 Bruner, Sand Springs Home 7.
27-19-12 Unallotted, Saunders et al 1-A.
2-18-12 Froe, Edwards et al 2.
Unallotted, Edwards et al 3.
19-17-13 Coppedge, W. E. Hammond et al 1.
2-16-12 Whitstone, S. W. Anthony 1.

Wells Drilling

28-19-10 Cooper, Kessler-Cochran 1.
14-19-11 Unallotted, Sand Springs Home 1.
36-19-11 Welsey, Regal Oil 1-A.
5-19-12 Townlot, H. F. Wilson 1.
Grayson, Echo Oil 1.
Grayson, Echo Oil 11
Strip, Fleetwood Oil 1
7-19-12 Unallotted, Sand Springs Home 1.
20-19-12 Berry, Thornton et al 1-A.
5-18-12 Sizemore, McGinnis 1.
2-18-13 Sargo, Thompson & Black 4.
14-18-14 Atkins, Broken Arrow Gas 4.
33-18-14 Harkey, Sax-Fox Oil 4.
25-17-12 Varnell, Murphy et al 1.
27-17-12 Hutchins, Bradstreet Oil 1.
31-17-13 Unallotted, Noble Oil 1.
1-17-14 McHenry, Frates Oil 2.
Drew, Wade & Findley 2.
3-17-14 Childers, Hall et al 3.
10-17-14 Childers, A. J. Pettit 2.
10-16-12 Jenkins, Thompson & Black 2.
14-16-12 Bawlin, Riverland Oil 2.
Self, Clark & Holden 1.

Wells Shut Down

13-18-12 Donaldson, Assn. P. & R. 1.
9-18-13 Strip, Pomeroy & Pouter 3.
16-18-13 Perkins, Vick Oil 10.
26-18-14 Harmon, Green et al 1.
16-17-13 Posey, Enfisco Oil 13.
Rigs, 10; wells drilling, 28; total, 38.

OKMULGEE COUNTY

Rigs

9-15-11 Strip, Indiahoma Refining 2.
11-15-11 Adams, Corden Oil 5.
12-15-11 Pendleton, Pollyana Oil 8.
29-15-11 Thompson, Kellough & Thompson 1.
3-15-12 McKee, Gates & Cook Drlg. 1.
11-13-12 Bearleman, King & Jackson 2.
31-12-12 Rentie, Dr. Thomas et al 10.
34-12-12 Holmes, Eagle Picher 6.
Rohnes, C. F. Dickerson 1.
32-11-12 Ashbury, Webb et al 1.
22-14-14 Wright, Kewanee 9.
32-14-14 Ashley, Jordan 2.
8-14-15 Anderson, J. L. Powell 5.

Wells Drilling

34-16-12 Vore, Sheldon et al 1.
35-16-12 Barnett, Southern States Oil 1.
25-16-14 Roberts, J. H. White et al 1.
3-15-11 Fee, Clover et al 3.
Adams, Jackron & Wise 5.
Strip, Beggs Oil 2.
6-13-11 Webster, Rebold et al 1.
25-14-12 Milner, Mueller, Jordan & Ashley 1.
6-15-11 Thompson, Sheridan Oil 1.
31-14-11 Tiger, George Wittman 1.
11-15-12 Cover, Olean Pet. 1.
Haynes, Gillespie 1.
28-13-11 Roberts, Mt. State and Clark Oil 1.
32-13-11 Thomas, Denver P. & R. 4.
32-13-12 Unallotted, Amerada Pet. 1.
31-12-12 Rentie, Wooster & Mee 4.
Rentie, Eureka Oil 10.
9-11-12 Hawkins, Moffett & Slick 1.
20-12-12 Henry, Southern States Oil 1.
35-12-13 Ponds, Keener 5.
23-13-14 Scott, A. G. Hazlett 1.
7-13-15 Bruner, E, J. Lambert 5.
Freeman, A. G. Hazlett 4.
5-14-13 Sneed, Mid-Kansas Oil 1.
28-14-14 Andy, W. R. Somerville 2.
33-15-14 Fish, A. W. Cline 2.

Shut Down

13-13-14 Barnett, Iron Mtn. Oil 6.
26-13-14 Harris, Lowry 13.
16-14-14 Love, F. D. Misener 4.
30-14-14 Thomas, W. B. Pine 1.
32-14-15 Carter, R. L. McFann 2.
28-15-13 Brown, A. Shelton 2.
34-16-13 Anderson, Tuteinson & Becker 2.
5-15-11 Gibson, C. A. Wheeler & Wilder 1.
12-15-11 Pendleton, Pollyana Oil 5.
26-15-11 Hill, Rickaw et al 2.
14-15-12 Sheppard, Frazier et al 1.
16-14-11 Lunsford, Clarian Oil 1.
22-13-11 Smith, C. L. Detter et al 1.
Morgan, Georgia Petroleum 2.
32-13-11 Beets, Brock et al 9.
27-12-12 Henry, Eagle Picher 1.
Rigs, 13; wells drilling, 42; total, 55.

SEMINOLE COUNTY

Rigs

8-10- 8 Buckner, Prairie Oil 12.
33-11- 8 Pierce, Mutual Oil 1.
3-10- 8 Yarhola, Roxana Pet. 2, 3.
Yarhola, Gypsy Oil 5, 6, 7.
4-10- 8 Dunn, Waite Phillips Oil 5, 6, 7, 8.
Jackson, Cosden Oil 5, 4, 6.
Wisner, Southwestern Pet. 2, 3, 4.
8-10- 8 Willis, Gypsy Oil 3, 4.
9-10- 8 Hall, Carter Oil 2.
10-10- 8 Little, Roxana 1, 2.
15-10- 8 Tiger, Roxana Pet. 3.
16-10- 8 Proctor, Roxana Pet. 2.
18-10- 8 Terral, Powers Pet. 1.
24- 9- 8 Simon, Kingwood & Empire 1.
25- 8- 7 Logan, Magnolia Pet. 3.
Howard & Ligon, Dixie Oil 2.

Wells Drilling

32-11- 7 Thomas, H. F. Wilcox Oil 1.
33-10- 6 Davis, F. J. Searight 1.
14-10- 7 Aldridge, Killibrew & Moore 1.
31-10- 7 Lack, Wrightsman & Gardner 1.
3-10- 8 Yarhola, Roxana Pet. 1.
Yarhola, Gypsy Oil 1, 2, 3, 4.
4-10- 8 Dunn, Central National Oil 2, 3, 4, 5, 6, 7, 8.
Dunn, Waite Phillips Oil 2, 3, 4.
Jackson, Cosden Oil 3, 7.
Jackson, Southwestern Pet. 1, 2.
Wisner, Southwestern Pet. 1.
Dunn, Empire G. & F. 1, 2, 3, 4.
Yarbrough, Sinclair Oil 1.
5-10- 8 Fixico, Sinclair Oil 1.
8-10- 8 Willis, Gypsy Oil 2.
Baker, Tidal Osage Oil 1.
9-10- 8 Bunner, Pure Oil 3, 6, 7, 9, 10, 11, 12.
Bruner, Transcontinental and Sinclair 6, 7.
Hill, Sinclair Oil 2.
Hale, Gypsy Oil 2, 3, 6, 7.
Starr, Amerada Pet. 2.
Hill, Carter Oil 1.
Starr, Carter Oil 4.
Hall, Carter Oil 1.
10-10- 8 Brown, Roxana Pet. 5.
Berryman, Roxana Pet. 1-A, 2, 3.
Berryhill, Roxana Pet. 2, 3, 4.
Little, Carter Oil, 1, 2, 3.
Brown, Carter Oil 2, 4.
Hill, Carter Oil 1, 2, 3, 4.
Little, McMan Oil 2, 4, 5.
Little, Shaffer Oil 1.
Berryhill, Kingwood & Sinclair 3.
15-10- 8 Tiger, Cosden 4.
Tiger, Snowden & McSweeney 3, 4.
Yarhola, Cosden Oil 7-W.
Bruner, H. F. Wilcox Oil 8.
Tiger, Roxana 2.
Harjo, Houston Oil 1, 2.
16-10- 8 Roberts, Carter Oil 4, 5.
Baker, Superior Oil 4, 5.
Proctor, Roxana Pet. 1.
Proctor, Waite Phillips Oil 3.
17-10- 8 Buckner, Sinclair Oil 1.
Bruner, Cosden Oil 2.
21-10- 8 Harjo, Tidal Osage Oil 3.
35- 9- 6 Cudjo, Gillette et al 1.
7- 9- 8 Cobb, Holmes & Jarvis 1.
23- 9- 8 Easup, T. Atkins et al 1.
25- 8- 7 Yornoh, Magnolia Pet. 1.
25- 8- 7 Rosana, Magnolia Pet. 2.
36- 8- 7 Cunsah, W. R. Ramsey 1, 2.
2- 8- 8 Manley, Southwestern Pet. 1.
19- 8- 8 McGiesey, Ramsey & Boogs 1.
28- 8- 8 Foster, Dixie Oil 5.
29- 8- 8 Josua, Magnolia Pet. 2.
Brown, Magnolia Pet. 1.
Walker, Magnolia Pet. 1, 2.
30- 8- 8 Bowlegs, Gardner Pet. 1.
Howard, Magnolia Pet. 2.
31- 8- 8 Salinda, W. R. Ramsey 1.
Salinda, W. R. Ramsey 1-B.
Bowlegs, W. R. Ramsey 1.
Salinda, P. & R. Corp 2.
Amos, P. & R. Corp. 3.
Willis, Boggs Oil and Sykes, 2, 3, 6, 7, 8.
32- 8- 8 Parker, Dixie Oil 1.
Walker, Dixie Oil 1.
Tiger, Magnolia Pet. 4.
Walker, Magnolia Pet. 1, 2.
Parker, Magnolia Pet. 4.
Franz, Magnolia Pet. 2.
Aldridge, Magnolia 1, 2.
Perryman, Shaffer O. & R. 5, 6, 7.
33- 8- 8 Long, Lewis & Clark 2.
Parker, Magnolia Pet. 5.
22- 7- 7 Davis, Transcontinental Oil 1.
27- 6- 7 Chupco, T. B. Slick 1.
18- 6- 7 Sanny, T. B. Slick 1.
6- 6- 8 Winey, R. F. Garland & Co. 1.
8-10- 8 Buckner, Prairie Oil 3, 4, 5.
10-10- 8 Little Prairie Oil 1.

Shut Down

15-10- 8 Tiger, Waite Phillips Co. 1, 2, 3.
9-10- 8 Bruner, Gardner & Carter 5, 7, 8.
Hale, Gypsy Oil 5.
13- 9- 7 Williams, Independent Oil 1.
19- 8- 8 Townsite, Ramsey et al 11.
29- 8- 8 Joseph, Amerada Pet. 2.
Walker, Dixie Oil 4.
Walker, Homaokla Oil 3.
33- 8- 8 Long, Lewis & Clark 3.
25- 6- 6 Mingo, T. B. Slick 2.
33- 6- 6 Christy, Maxwell & Harvey 1.
14- 6- 7 Carolina, Link Oil 1.
20- 6- 7 Dindy, Maxwell, Kawfield & McDougal 1.
Rigs, 28; wells drilling, 154; total, 182.

OKFUSKEE, HUGHES AND M'INTOSH COUNTIES

Rigs

4-13- 8 Saryokishe, Link Oil 2.
36-12-10 Gray, Atlantic Oil 2.
Fisher, Atlantic Oil 2.
27-12-11 Holmes, Hartman 1.
3-11-11 Meyers, W. B. Pine 4.
11-10- 8 Little Roxana Pet. 2.
14-10- 8 King, Tidal and Carter Oil 1.
34-10- 9 Williams, I. T. I. Oil 4, 6.
Williams, Gypsy Oil 3.
35-10- 9 Sand, Kingwood Oil 4, 6.
2- 9- 9 Alexander, Izora, T. B. Slick 3.
Bruner, T. B. Slick et al 2, 3.
Alexander, Independent Oil 3.
3- 9- 9 Grayson, T. B. Slick 3, 4.
Grayson, Slick and Gypsy Oil 3.
Grayson, T. B. Slick et al 4.
4- 9- 9 Tiger, Forter Inv. Co. 3-C.
Tiger, Transcontinental Oil 7, 8.
Carter, Skelly Oil 2.
Carter, E. L. Robinson and Amerada Pet. 4, 5.
17- 9- 9 Brown, Margay Oil 7.
18- 9- 9 Brown, Cosden Oil 1.
Brown, Magnolia Pet. 2.
Brown, Arkansas Natural Oil 2.
20- 9- 9 Simon, Minnehoma Oil 1.
22- 9- 9 Bowlegs, Gypsy Oil 1.
3- 9-11 Baker, Tidal Osage Oil 4.
4- 9-11 Baker, Tidal Osage Oil 1.
29-11-14 McIntosh, E. O. Sargent 2.
34-10- 9 Davis, Prairie Oil 4.

Wells Drilling

2-12-16 Wineblood, Montague Texas Oil 2.
1-13- 7 Simmons, Burk Greis Oil 1.
4-13- 8 Saryokishe, Keener Oil 1.
5-13- 9 Fixico, West et al 1.
21-13- 9 Callahan, Independent O. & G. 1.
22-12- 9 Montgomery, Sinclair Oil 1.
23-12- 9 Callahan, Wanscine Pet. 1.
20-12-10 Watron, Amerada Pet. 1.
23-12-10 Harjo, Blakely et al 1.
25-12-10 Fisher, Wedell & Blakely 1.
28-12-10 Johnson, Blakely & McClain 1.
36-12-10 Fisher, Atlantic O. P. 3.
32-12-11 Hulsey, Josey Oil 1.
Fields, Josey Oil 1.
33-12-11 Grayson, Anglo Texas Oil 3.
McCoy, Josey Oil 3.
19-11-10 Grayson, Gibson & Zahniser 1.
30-11-10 Grayson, Empire Co. & Jellison 1
3-11-11 Tarvin, Webster et al 3.
4-11-11 Cully, Anglo Texas Oil 1.
5-11-11 Sears, Hartman et al 1.
26-11- 7 Schove, C. J. Wrightsman 1.
14-10- 8 King, Roxana 1, 2.
King, Tidal Osage 2.
King, Snowden & McSweeney 1.
King, Gypsy Oil 1.
King, White Eagle Oil 1.
8-10- 9 Morris, Berry Pet. 1.
26-10- 9 Shawver, Bingham-Smith Oil 1.
31-10- 9 Carolina, Berry Pet. 1.
33-10- 9 Johnson, Carter Oil 2, 3.
34-10- 9 Williams 1, 2, 3.
Williams, Gypsy Oil 1, 2.
35-10- 9 Sand, T. B. Slick 2, 3, 4.
Dunson, T. B. Slick 1.
Carbogo, Cosden Oil 1.
Sand, Kingwood Oil 1, 2, 3, 5.
34-10- 9 Davis, Prairie Oil 1.
35-10-12 McQueen, Carter Oil 1.
2- 9- 9 Alexander, T. B. Slick et al 1, 2
Bruner, T. B. Slick et al 1.
Alexander, Independent O.&G. 1, 2
Alexander, Sarah, Independent O & Gas 1.
3- 9- 9 Grayson, T. B. Slick and Gyps; Oil 2, 3.
Grayson, T. B. Slick 1.
Alexander, Cosden Oil 7-W, 8-W.
Grayson, Scott, T. B. Slick 3.
Grayson, Murray, T. B. Slick 1, 2
Grayson, McKay, T. B. Slick 2.
Caney Arber, Phillips Pet. 1.
4- 9- 9 Alexander, Papoose Oil 6.
Tiger, Transcontinental Oil 6.
Carter, Mutual Oil 1.
5- 9- 9 Carter, Transcontinental Oil 2.
15- 9- 9 Smith, T. B. Slick 1.
17- 9- 9 Brown, Arkansas Natural Oil 2.
4- 9-11 Baker, Tidal Osage Oil 1.
9- 9-11 Bruner, Mid-Kansas Oil 1.
Baker, Mid-Kansas Oil 1.
Reed, Mid-Kansas Oil 1.
1- 8- 8 Chupco, Berry Pet. Co. 1, 2.
Manley, Sinclair Oil 1.
Chupco, Roxana Pet. 1.
11- 8- 8 Larney, Dixie Oil 1.
12- 8- 8 Culler, Roxana Pet. 1, 2, 3.
35- 8- 8 Jefferson, Johnson & Ashe 1.
18- 8-10 Irvine, Divie Oil 1.
5- 7- 8 Grayson, Dixie Oil 1-B.
12- 5- 9 Johnson, Douglas Oil 1.
4- 5-11 McClain, Mathers & Skelly 1.

Shut Down

19-12-14 Barnett, Flesher 1.
14-12- 8 Billy, Western States Oil 1.
36-12- 9 McMahan, Henry Oil and Burk Greis 1.
8-12-10 Yarhola, Blakely et al 1.
33-12-11 Grayson, Anglo Texas Oil 2.
Hawkins, Josey Oil 1.
25-11- 9 Hill, E. R. Robinson & Gibson 1.
3-11-11 Hawkins, Tidal Oil 2.
27-11-11 Harjo, H. F. Clark 1.
34-11-11 Barnett, Oklavania 3.
33-10- 9 Barnett, Midwest and Gulf Oil 1.
15- 9- 9 Davis, Turman Oil 1.
17- 9- 9 Brown, H. F. Wilcox O. & G. 1,3.
Brown, Gilcrease Oil 3.
Brown, Margay Oil 1, 2, 5, 6.
Brown, Roxana Pet. 1, 2.
20- 9- 9 Simon, Gilcrease Oil 2.
23- 9- 9 Bruner, C. J. Wrightsman 1.
15- 7- 8 Beaver, P. & R. Corp 1.
Rigs, 36; wells drilling, 112; total, 148.

MUSKOGEE AND WAGONER COUNTIES

Rigs

7-14-19 Tipton, J. W. Hale 2.
9-16-16 Crossland, H. E. Jones 1.
17-17-16 Boudinot, J. A. Swindler 1.
19-17-16 Bruner, Hartman & Wright 1.
23-18-18 Perryman, Aggas & Kirker 1.

Wells Drilling

13-13-15 McGilbray, J. S. McCutcheon 2.
27-14-15 Smith, A. G. Hazlett 3.
19-14-19 Harris, M. E. Johnson 1.
2-15-16 Perryman, A. B. Ice 2.
35-15-16 Lee, Harsha 1.
17-15-17 Manuel, H. E. Williams 4.
17-17-16 Boudinot, A. E. Carder 2.
29-17-17 Lewis, W. T. Wright 1.
30-17-17 Wilson, W. D. Egolf 2.
29-17-18 Marshall, E. Coady 1.
25-18-15 McKellop, A. E. Carder 1.
23-18-16 Childers, F D. Craver 2.

Wells Shut Down

24-12-19 Hood, Fike & Klatt 1.
8-14-16 Bumpus, J. D. Edmiston 1.
19-14-16 Beams, Voegler 7.
1-14-17 Sango, T-O Pet. 7.
7-15-16 Smith, A. Straughn 3.
25-15-16 Perryman, J. W. Curridan 1.
1-17-17 Taylor, W. J. Metzger 4.
30-16-17 Bennett, Korp & Ford 2.
32-15-16 Poncil, J. L. Powell 2.
28-15-16 Canard, J. Summers 2.
29-17-19 Cobb, Aggas & Kirker 1.
18-18-15 Anderson, G. H. Lowe 1.
20-18-15 Parks, Allen 2.
21-18-16 Tiger, B. B. Wheeler 1.
29-18-17 Murrell, J. D. Marshall 1.
Trent, J. D. Marshall 1.
35-18-19 Talbert, Aggas & Kirker 1.
Rigs, 5; wells drilling, 29; total, 34.

CREEK COUNTY

Rigs

14-19- 8 Hinton, Kiskaddon et al 2.
Lewis, Gowland et al 1.
32-17- 8 Washington, Savoy Oil and Page 2.
Washington, Olean Pet. 6.
17-15- 8 Yarhola, Pure Oil 15.
Wilson, Roxana Pet. 11.
Roberts, Eastern Oil 5.
20-15- 8 Beaver, Skelly Oil 1-A.
11-14- 8 White, Aztec Oil 4.
18-18- 9 Jones, Eva Bell Oil 3.
6-18-11 Haynes, Hartman & Williams 1.
6-16- 9 Barnett, T. P. C. & O. Co. 1.
20-16- 9 Barnett, Dickerson et al 1.
32-16-10 Deer, Phillips Pet. 3.
7-16-12 Conger, Jones & Cravens 1.
8-16-12 Townsite, Noble Oil 1.
Townsite, A. B. Ice 1.
Townsite, McFarland et al 1.
26-14- 9 Havercamp, Briscoe et al 1.
21-14-10 Scott, E. L. Kistler et al 2.
13-17- 8 Smith, Prairie Oil 1.

Wells Drilling

12-19- 8 Grayron, J. B. Graves 2.
14-19- 8 Miller, Oklahoma Eastern Oil 1.
16-18- 7 Manuel, Sinclair Oil 8.
11-17- 8 Self, Tim Cushing 1.
13-17- 8 Bishop, Madden & Madden 1.
23-17- 8 Johnson, Savoy Oil 3.
24-17- 8 Green, Lima Oil 2.
25-17- 8 Morrison, Roland Oil 2.
32-17- 8 Washington, Olean Pet. 2, 7.
Washington, O. P. & R. Corp. 2.
Hamilton, Carter Oil 1.
6-16- 8 Willis, Olean Pet. 1.
22-16- 8 Knoll, Laurel Oil 8.
33-16- 8 Larnie, Woolfe Oil 1.
6-15- 7 Emarthla, Oklahoma Nat'l Gas 1.
Steele, O. P. & R. Corp. 1.
17-15- 8 Roberts, Eastern Oil 7.
7-14- 7 Lewis, Roxana Pet. 2.
Jack, Pulaski Oil 1.
Stover, Pure Oil 1, 2.
Lewis, Chas. F. Noble 1.
16-14- 7 Clanton, Gladys Belle Oil 1.
17-14- 8 Har-Lar-Gar, Shaffer O. & G. 1.
30-14- 8 Kernal, O. P. & R. Corp. 2.
31-19- 9 Cates, Waite Phillips 1.
21-17- 9 Charcotenne, Wood & Farren 1.
16-16- 9 McNee, Nowata O. & R. 2.
34-16- 9 Brady, Twin State Oil 1.
35-16-10 Froe, Hartman & Williams 1.
36-16-10 Burford, Independent O. & G. 2.
8-16-12 Townsite, Dixie Drlg. Co. 1.
Townsite, L. B. Pratt et al 1.
Townsite, Stout et al 1.
Townsite, Texas Co. 1.
Townsite, Wilcox O. & G. 1.
Townsite, Suppes et al 1, 2.
Townsite, Woodbury et al 1.
Townsite, Lebow et al 1.
Townsite, Jones et al 1.
Townsite, Vick Oil 1.
4-15- 9 Fahcoconeney, Phillips Pet. 6.
7-15- 9 Jefferson, Roland Oil 1.
17-15- 9 Wolfe, Turman & Atlantic Oil 1.
30-15- 9 Unallotted, Billingslea et al 1.
31-15- 9 Posey, Skelly & Billingslea 1.
22-15-10 Friday, Cumberland Oil 1.
27-15-10 Sewell, Gotham Pet. 1.
18-14- 9 Washington, Tibbens et al 2.
24-14- 9 McIntosh, Phillips Pet. 1.
Bear, Cosden Oil 1.
28-14- 9 Jones, Billingslea et al 1.
4-14-10 Strip, Wilson et al 1.
Greenwood, Tom Kelly et al 2.
16-14-10 Bear, Josey Oil 1.
17-14-10 Peters, Donnelly et al 2.
Johnson, Hall & Donnelly 2.
McNevins, Atlantic O. P. 1.

20-14-10 Kimble & Reading, Wilcox O. & G. 1, 2.
Stuart, C. F. Noble 1.
21-14-10 Harjo, Waite Phillips 2.
32-14-10 Walker, Empire G. & F. 1.
24-14- 9 McIntosh, Prairie Oil 1.
21-17- 9 Self, Prairie Oil 3.
33-16- 9 Shoals, Prairie Oil 8.
5-16- 8 Hammer, Prairie Oil 3.
Shut Down
13-19- 8 Robinovitz, U. S. Oil 1.
17-18- 7 Starr, Silurian Oil 22.
23-19- 8 Harmon, F. O. Howarth 1.
32-17- 8 Washington, Olean Pet. 2.
22-16- 8 Wilson, Cortez Oil 6.
Knoll, Laurel O. & G. 7.
29-16- 8 Hawkins, Clayton Lynch et al 1.
8-15- 8 Wilson, Gypsy Oil 3.
16-15- 8 Knight, Kanawa O. & G. 2.
26-15- 8 Narchubby, Buell & Bartlett 1.
7-14- 7 Lewis, Roxana Pet. 1.
30-19- 9 Jefferson, Asa Bailey et al 2, 3.
29-18-10 Sloan, Sapulpa Fuel 2.
14-18-11 Holden, Acosta et al 2.
18-18-11 Bruner, McLean et al 3.
32-18-11 Frew, Cross et al 1.
13-17-11 McIntosh, A. Sheldon 1-A.
9-16- 9 Childers, Jomac Oil 4.
Unallotted, Cameron et al 1.
2-16- 11 Olentine, Pulaski Oil 1.
8-16-12 Townsite, Hancock & West 1.
17-16-12 Funk, R. B. Hartman & Sons 1.
4-15- 9 Wisener, Phillips Pet. 4.
5-15- 9 Roger, Texas Co. 1.
21-15- 9 Montgomery, Mondt & Clay 1.
29-15- 9 Smith, Carter Oil 1.
30-15- 9 Conn, Billingslea et al 2.
Rigs, 21; wells drilling, 97; total, 118.

PAWNEE COUNTY

Rigs

4-22-3e Miller, Magnolia Pet. 6.
Miller, Watchorn Oil 6.
5-22-3e Wolfe, Magnolia Pet. 2.
8-20- 7 Fleming, Twin State 4.
25-20- 9 Townsite, Thomas et al 1.
Wells Drilling
15-20- 7 Ham, Prairie Oil 3.
32-23-3e Robodeaux, Magnolia Pet. 1, 4.
33-23-3e Brown, Watchorn Oil 1.
Miller, Watchorn Oil 7, 10.
Miller, Marland Oil 2, 4.
4-22-3e Miller, Magnolia Pet. 4.
Ely, Magnolia Pet. 2, 3.
Arkeketa, Magnolia Pet. 1.
Sanders, Magnolia Pet. 3.
Miller, Watchorn Oil 4.
5-22-3e Altaffer, Magnolia Pet. 1.
Diamond, Watchorn Oil 1.
Droin, Watchorn Oil 1.
5-23-5e Bennett, Haley, Garber & Pulse 2.
25-22-6e Bell, Victor Oil 1.
26-21-4e Schermerhorn, Independent O. & G. 1.
8-21-7e Crain, Freeman et al 1.
4-20-5e Davis, Flynn, Morgan & Shaffer Oil 1.
14-20-5e Hill, Haley, Garber & Pulse 1.
16-20-6e School land, Magnolia Pet. 2, 3.
21-20-6e Ricks, Privett Drlg. Co. 2.
22-20-6e Smith, Westerly Oil 1, 5.
28-20-6e White, Davis Drlg. Co. 1.
4-20-7e Townsite, Vick Oil 1.
16-20-7e School land, Cosden Oil 5, 6, 7.
17-20-7e Townsite, Reese et al 4.
Pettit, Galvez Oil 5.
Canfield, Steen et al 3.
Shut Down
4-22-3e Miller, Watchorn Oil 1.
22-23-4e Zoldoskie, Donahoe 1.
26-23-5e Smith, Turman Oil 1.
10-22-6e Towner, J. H. White et al 1.
21-21-7e Armstrong, Nixon & Flight 1.
20-21-8e Martin, Rox Oil 4.
31-21-8e Havercamp, J. B. Greaves 1-A.
32-21-8e Meyers, Adamson et al 2.
21-20-6e Lesher, Magnolia Pet. 1.
Freeman, Josey Oil 2.
15-20-7e Morahan, Bailey et al 1.
Rigs, 5; wells drilling, 47; total, 52.

PAYNE, LINCOLN AND KAY COUNTIES

Rigs

16-29-5e Noble et al 1.
20-29-1w Day, Texas Co. 1.
10-27-1w Humphries, Blackwell O. & G. 2.
12-26-2w North, Alcorn Oil 3.
Dillen, Alcorn Oil 1.
Hubbard, Alcorn Oil 3.
McCullough, Alcorn Oil 2, 3.
2-26-4e Baum, Schendler 1.
35-25-1w Ogg, Comar Oil 3-W, 7-W.
Endicott, Comar Oil 4-W, 9-W.
Goltry, Carter Oil 14.
2-20-2e Catt, Colorado O. & G. 1.
24-19-1e Jackson, Amerada Pet. 1.
9-19-5e Garr, Garr Oil 3.
35-19-5e Laughlin, Josey Oil 5.
27-15-5e Maness, Magnolia Pet. 1.
2-15-6e Pinkston, McMan Oil 1.
12-14-6e Townsite, Union Pet. & Supply 6.
Townsite, Square Deal Oil 1.
Wells Drilling
3-14-5e Stout, Prairie Oil 1.
1-26-2w Smith, Prairie Oil 1.
25-29-2w Sheets, Hickman & Barnhart 1.
15-29-1w Branine, McComas & Jarvis 1.
17-29-1w Moore, Twin State 1.
21-29-1w McCormick, Comar Oil 1.
McCormick "B", Comar Oil 1, 2.
Harel, Comar Oil 1.
Priboth, Comar Oil 1, 2.
22-29-1w Le Mars, White Eagle O. & R. 1.
9-27-1w Brown, Harris & Haun 1.
17-27-1w Jameson, Carter Oil 1.
18-27-1w Johnson, Una Lee Oil 1.
27-27-3w Lewis, Alcorn Oil 1.
1-26-2w Fitzgerald, Alcorn Oil 1.
Hockstater, Alcorn Oil 1.
12-26-2w North, Alcorn Oil 1, 2.
Hubbard, Alcorn Oil 2.
McCullough, Alcorn Oil 1.
13-26-2w School land, Magnolia Pet. 1.
28-26-2w Carr, O-Kansas Oil 1.
15-25-2w Thomas, Alcorn Oil 2.
16-25-2w McFarland, Alcorn Oil 1.
21-25-2w Turk, Alcorn Oil 1.
22-25-2w Siler, Twin State 2.
27-25-1w Unknown, Texas Co. 7.
Suiter, McMan Oil 1, 5.
28-25-1w Siler, Louis Freedman 1.
33-25-1w School land, Cosden & Marland 3-A.
34-25-1w Woods, Amerada 35, 37, 38, 39, 40.
Endicott, Pennok Oil 6-D.
Endicott, Comar Oil 8-W.
Beverlin, Comar Oil 2-W, 3-W, 4-W, 7-W, 8-W, 15-W, 18-W.
McKee, Wentz Oil Corp. 46, 47, 48, 49.
McDaniel, Blackwell O. & G. 3-C.
McDaniels, Phillips Pet. 4, 5, 6.
35-25-1w Ogg, Comar Oil 1-W, 5-W.
Endicott, Comar Oil 2-W, 8-W.
Endicott, T. B. Slick 4-E.
Goltry, Carter Oil 8, 11, 12, 13.
19-25-2e Miller, Marland Oil 1.
16-20-2e School land, Waite Phillips and Gypsy 1.
21-19-1w Lewis, Ponca Oil & Gas 1.
6-19-4e Brandon, T. B. Slick 1.
36-19-5e Ellis, Josey Oil 4.
17-19-6e Moner, Carter Oil 1.
Douglas, Carter Oil 2.
23-18-3e Derry, Deep Rock O. & G. 1.
32-18-4e Payne, Mulberry Oil 3.
19-17-3e Sutton, Roy Willis et al 1.
23-17-3e Young, Roy Willis et al 1.
28-17-3e Keller, Plateau Oil 1.
16-17-4e School land, Flynn, Morgan & Bailey 1.
1-17-5e Hughes, O'Herin & Hughes 1.
23-16-6e Briggs, Day Oil 1.
32-15-4e Dodrill, Magnolia 1.
36-15-4e Cull, Ruby et al 1.
34-15-5e Smith, Magnolia 1.
1-15-6e Sawyer, Gypsy Oil 1.
6-15-6e Earp, Independent O. & G. 1.
12-14-4e Leake, Pure Oil 1.
20-14-4e Pequay, J. C. Cook 1.
2-14-5e Sukovaty, Magnolia Pet. 1.
3-14-5e Sproleder, Magnolia Pet. 1.
Sukovaty, Magnolia 1.
Bagwell, Southwestern Pet. 1.
7-14-5e Ayers, Magnolia Pet. 1.
18-14-5e Bray, Magnolia 1.
12-14-6e Townsite, Dowell et al 2
Townsite, Willis et al 1.
Townsite, Union Pet. & Supply 5.
Townsite, Berry et al 1.
15-14-6e De Lasier, J. C. Cook 1.
5-13-6e Lewis, Mt. State Oil 1.
14-13-6e Heinzig, P. & R. Corp. 1.
12-12-3e Smith, Wilcox O. & G. 1.
26-12-2e Dodrill, Eugene Costa et al 1.
8-12-5e Richardson, J. C. Cook 1.
9-28-4e Douglas Oil 1.
Wells Shut Down
15-29-1e Davidson, Lancer 1
11-28-1e Lowery, Okla. Northern O. & G. 1.
15-28-1e Tranary, Grand Island Oil 1.
16-27-1w Jewell, National Union Oil 2.
13-27-1e School land, P. & R. Corp 1.
8-26-2w Vannatta, Day Oil 1.
16-25-2w Thomas, Alcorn Oil 1.
McFarland, Alcorn Oil 2.
4-25-2w Kreger, Clair Smith 1.
21-25-2w Thomas, McCaskey & Wentz 1.
Turk, Carter Oil 2.
27-25-2w Simmons, W. E. Brown Oil 1.
36-25-2w Davis, Marland & Embry 1.
20-25-1w Pool, Bailey & Thornton 1.
35-25-1w Ogg, Comar Oil 6-W, 4-W.
Endicott, Comar Oil 3-W.
35-19-5e Laughlin, Home Gas Co. 1.
20-17-5e Strong, Grimes et al 1.
16-16-4e Hobson, Wilcox & Oswalt 1.
22-15-2e Harris, F. O. Howarth 1.
17-15-3e Powell, Sanrock Drlg. Co. 1.
15-15-6e Hubbard, Johndahl Oil 1.
2-14-6e Schubel, Union Pet. and Waite Phillips 1.
12-14-6e Townsite, Union Pet. & Sup Co. 2, 8.
Townsite, Hoyt & Wicker 1.
Townsite, Atlas Drlg Co. 1.
7-13-3e Ewing, Douglass Oil 1.
18-13-5e Gallagher, Sun Ray Oil 1.
Rigs, 22; wells drilling, 133; total, 155.

GARFIELD AND NOBLE COUNTIES

Rigs

2-24-1w Blubaugh "C", Comar Oil 7-W.
21-24-1w Smithesler, Amerada & Champlin 2.
25-23-1w Burnsides, Jankowsky et al 1.
11-21-4w Bice, Boeple et al 1.
7-21-3w Kellner, Chaffee et al 1.
Wells Drilling
2-24-1w Shawver, Gypsy Oil 17, 34, 40, 48, 82, 86, 87, 88, 89, 90, 91, 92, 93.
Blubaugh "C", Comar Oil 1-W, 3-W, 5-W, 9-W.
Blubaugh "A", Comar Oil 23-B, 1-W, 5-W, 8-W, 12-W, 15-W.
Gaume, Comar Oil 3, 3-W, 8-W, 9-W, 10-W, 11-W, 12-W, 14-W, 15-W.
3-24-1w Pettit, Comar Oil 2-W, 5-W, 6-W, 9-W, 10-W, 15-W, 17-W, 19-W.
Ruzek, Blackwell O. & G. 4-D.
11-24-1w Rence, Healdton O. & G. 2-A.
20-24-1w Redd, Williams & Day 1.
30-24-1w Wilkins, Mid-Co Pet. 1-A.
30-21-1w Grim, Twin State 1.
32-20-1e Hall, Nelson & Hardin 1.
27-21-3e Dollarhide, Marland Oil 1.
13-22-4w Walker, Sinclair Oil 17.
24-22-4w Belveal, Sinclair Oil 25.
26-22-4w Bangerter, Sinclair Oil 2.
19-22-3w Crews, Sinclair 15.
Kisner, Sinclair Oil 12.
30-22-3w Crews, Sinclair 10.
31-22-3w Morrison, Sinclair Oil 8.
22-21-4w Miller, Alcorn Oil 1.
Shut Down
25-20-4w Rhodes, William King 1.
22-24-2w Kurby, Wilkins & Kors 1.
2-24-1w Gaume, Comar Oil 4-W.
3-24-1w Pettit, Comar Oil 18-B.
9-24-1w Crober, John Herron 1.
11-24-1w Rence, Healdton O. & G. 13-B.
McCutcheon, Comar Oil 1.
15-24-1w Morris, Champlin Ref. 2.
29-24-1w Case, Mid-Co Pet. 11-A.
20-24-2e Ray, Ossenbeck et al 1.
15-23-2w Washburn, Mid-Co. Pet. 13.
Neal, Tidal Osage 15.
1-22-2w White, Frank Kelley et al 1.
15-21-2w Sans, Bu-Vi-Bar 1.
12-21-3w Sawyer, Ossenbeck & McMan 1.
17-23-8w Dyche, Jack Reid et al 1.
26-23-7w Cox, Katherine Oil Syndicate 1.
6-23-6w Hess, Wier & Wood 1.
16-23-3w School land, Monohan et al 1.
3-22-5w Swinery, J. H. Pringle et al 1.
25-22-4w Hotson, Empire G. & F. 10.
36-22-4w Heim, Rabbits Foot Oil 10.
Heim, Imo Oil 8.
13-22-3w Butts, Brown & Morris 1.
18-22-3w Schroeder, Roxana Pet. 5.
2-21-7w Montgomery, Frank Frantz 1.
31-21-5w Vanderwork, E. A. Summers 1.
12-21-4w Schriver, Boeple et al 1.
7-20-6w Semrad, Hastie, Smith and Jens Marie Oil 1.
19-20-5w Ray, Summers and Atlantic O. P. 1.
13-20-4w Faramel, Summers et al 1.
Rigs, 5; wells drilling, 86; total, 91.

CARTER COUNTY

Rigs

28-1s-3w Jennings, Templeman & Frantz 2.
12-2s-3w Pierce, Coline Oil 6.
8-3s-2w Mullen, Coline Oil 2.
McGill, Schermerhorn 2, 3.
20-5s-1e Criner, Amerada Pet. 5, 6.

Wells Drilling

10-1s-3w Gray, Magnolia Pet. 1.
18-1s-3w Hardin, Magnolia Pet. 1.
19-1s-3w Hardin, Magnolia Pet. 1.
27-1s-3w Cassidy, Simpson Fell 1.
Poland, Twin State Oil 1.
28-1s-3w Champion, Noble-Gault 1.
Hales, Humble Oil 1.
Jennings, Humble Oil 4.
Parsons, Tidal Oil 2, 3.
29-1s-3w Spears, Magnolia Pet. 1.
32-1s-3w Johnson, Magnolia Pet. 2.
33-1s-3w Lusk, Humble Oil 2.
35-1s-3w Williams, Magnolia Pet. 1.
23-2s-3w Williams, Fitzgerald 3.
Davis, Twin State 4.
27-2s-3w Fee, C. R. Smith 6.
35-2s-3w Brooks, Rockland Oil 8, 9.
36-2s-3w Chute, Tidal Oil 4.
31-2s-2w Palmer, Patsey Kirk Oil 5-A.
Bennett, Magnolia Pet. 12, 13.
32-2s-3w Palmer, Schermerhorn Oil 6-B.
6-3s-2w Bogle, Healdton Pet. 2.
8-3s-2w Mullen, Coline Oil 1.
22-4s-2w Hefner, Carter Oil 18.
13-5s-3w Beal, Wickenhiser et al 1.
5-5s-2w Lewis, Coline Oil 1.
20-5s-1e Farve, Amerada Pet. 18.
Gardner, Amerada Pet. 5.
28-5s-1e Clay, Amerada Pet. 2, 3.
Westheimer, Amerada Pet. 2.
Shut Down
19-1s-2w Movis, McGee 1.
28-1s-3w Jennings, Humble Oil 3.
29-1s-3w Miller, Humble Oil 1.
22-2s-3w Lohman, Wirt Franklin 2.
25-2s-3w Jefferson, Twin State 6.
Simpson, Skelly Oil 2.
27-2s-3w Fee, C. R. Smith 5.
8-3s-2e Harrison, Noble Oil 1.
27-3s-2e Brown, Home Oil 1.
4-4s-3w Jones, Coline Pet. 3.
21-4s-2w Noble, Skelly Oil 13.
22-4s-2w Okla-Dillard, Humble Oil 8.
Dillard, Humble Oil 9.
16-4s-1e Bishop, Felmlee et al 1.
Rigs, 7; wells drilling, 48; total, 55.

STEPHENS AND COTTON COUNTIES

Rigs

25-1s-9w Edmundson, Carter Oil 1.
22-1s-8w Warner, C. & O. Drlg Co. 2.
33-1s-8w School, Magnolia Pet. 16.
13-2s-8w McCaster, Anderson & Schoonmaker 1.
36-2s-8w Enloe, Wells, Pearson & Smith 1.
3-3s-5w Webb, Magnolia Pet. 6.
Wells Drilling
6-2n-4w Tollison, Earl C. Frates 1.
23-1s-10 Bonderant, A. A. Peard 4.
13-1s-9w Schove, Magnolia Pet. 6.
24-1s-9w Armstrong, Best of All Oil 1-A.
Ravis, Lone Star Gas 5-A.
18-1s-8w Johnson, Calhoma Oil 1.
19-1s-8w Brooks, Lone Star Gas 4.
Bridenthal, Ellis Drlg. Co. 4.
20-1s-8w Bartley, Magnolia Pet. 9.
22-1s-8w Wilbur, Pauline Oil 1-A.
27-1s-8w Schick, Grigsby Oil 2.
29-1s-8w Hall, Magnolia Pet. 2.
32-1s-8w Blaydes, Amerada Pet. 11.
4-1s-7w Fee, Ballard & Shoptaw 1.
11-1s-4w Womack, Magnolia Pet. 1.
28-2s-13 Dyer, Carter et al 1.
7-2s-8w Mitchell, Luffborough & Ryon 1
13-2s-8w Mooks, Magnolia Pet. 3.
15-2s-7w Toney, Magnolia Pet. 2.
17-2s-7w Wilson, Magnolia Pet. 9.
18-2s-7w Bristowe, Mid-Kansas Oil 3.
30-2s-7w Enloe, Holbrook et al 1.
14-2s-6w Norman, Magnolia Pet. 1.
11-2s-5w Martin, Magnolia Pet. 2.
Shut Down
23-1n-4w Edwards, Russell, Grimes & Atlantic 1.
5-1s-8w Armstead, Gant et al 1.
22-1s-8w Worrell, Fisher & Brannon 3.
33-1s-8w Stephens, Magnolia Pet. 15.
17-2s-7w McDaniel, Avant & Anderson 2.
11-3s-8w Beale, C. E. Starr 1.
13-5s-13 Day, Fisher et al 1.
Rigs, 6; wells drilling, 31; total, 37.

SOUTHERN OKLAHOMA

Rigs

Jefferson County—
7-5s-9w Unknown, W. E. Norton 1.
18-6s-5w Grayson, Heydrick et al 1.
Wells Drilling and Shut Down
(Shut down wells indicated by *)
Atoka County—
1-2s-9e Fee, J. P. Torrence et al 1*.
7-2s-9e Wild, McPherson et al 1.
28-2s-9e Underwood, Wapanucka Dev. Co. 1*.
17-4s-11 Dabney, Hanson et al 1.
Bryan County—
26-7s-11 Hampton, Alexander 1*.
Jefferson County—
31-4s-8w Anderson, Counell Oil 1.
9-4s-4w Mullen estate, Roy Johnson 1.
21-5s-6w Cowden, Tarkington & Kelsey 1.
34-5s-6w Major, Barker et al 1*.
36-5s-4w Woodwarth, Godley Oil 1*.
25-6s-6w Spring, Magnolia Pet. 1.
4-6s-5w Seay, Maxwell 1*.
31-6s-5w Seay, Cameron & Anderson 1.
35-6s-5w Seay, Empire G. & F. 1.
33-7s-6w Standfield, Landis et al 1.
4-7s-5w Seay, Cherry & Coush 1*.
3-7s-7w Unknown, Lugg et al 1.
Johnson County—
7-4s-4e Trootes, Washita O. & G. 1*.
36-5s-6e Holden, United 8 Oil 1*.
—Love County—
29-6s-3e Starritt, Simms Oil 1.
11-7s-2e Wilson, Driller Syndicate Oil 1*.
Murray County—
2-2n-5e Fine, Black & Thompson 1.
Tillman County—
7-2s-18 Duncan, Overbee, Crone & Kirkwood 4*.
10-4s-10 Cush, A. E. Spears 1*.
4-5s-14 Goehler, Schwartz et al 1.
11-1n-17 Faulkner, H. S. & H. Oil 1.
Rigs, 2; wells drilling, 26; total, 28.

MISCELLANEOUS

Rigs

Caddo County—
35-6n-9w Shunk, Acme Dev. Co. 1.
Woodward County—
4-23-17 Norduke, Diamond Drlg. Co. 1.
Logan County—
32-18-3w Quier, Haley & Pioneer Pet. Co. 1.
35-17-4w Field, McMunn & Nixon 1.
Pontotoc County—
34-5s-6e Roy, Bowles & Smith. 1.
Grady County—
31-10-8w Unknown, Hawkins & Young 1.
35-5n-8w McCaughtry, Hagerlin et al 2.
2-4n-8w Taylor, Okla. Nat. Gas 2.
Garvin County—
16-1n-3w Harris, Magnolia Pet. 5.
Wells Drilling and Shut Down
(Shut down wells indicated by *)
Alfalfa County—
21-27-10 Watts, McGinnis & Ward 1*.
25-24-11 Turnbull, Armstrong, Henley & Peffley 1.
Beaver County—
33-5n-28e Unknown, Gates Valley Oil 1*.
Beckham County—
24-9n-25 Unknown, W. H. Sheddon 1.
6-9n-24 Burkholder, J. A. Pringle 1*.
24-8n-22 Unknown, J. R. Lines 1*.
19-8n-21 Van Vector, Kadane et al 1*.
31-8n-21 Wall, Kouri et al 1*.
Blaine County—
26-15-12 Dickerson, Thompson 1*.
21-15-10 Ekiemeier, Okomo Oil 1*.
Caddo County—
35-6n-9w Fugate, Acme Dev. Co. 2*.
Grant County—
29-29-4w Ridings, Phillips Pet. Co. 1.
8-27-8w Moon, Midwest & Gulf Oil 1*.
30-27-4w Fuss, Frank Traves et al 1*.
2-27-3w Webb, Marland Oil 1.
14-27-3w Howell, Western States Oil 1*.
22-27-3w Stewart, Western States Oil 4-A.
23-27-3w Crouch, Western States Oil 2.
27-27-3w Lane, Western States Oil 1*.
20-26-4w Edwards, Embry & Leright 1*.
Woods County—
10-25-15 Van Buskirk, Victor Oil 1*.
Ellis County—
32-24-24 Meegan, Utility O. & G. 1*.
2-21-24 James, Gage Oil 1*.
10-21-24 Cross, Utility O. & G. 1*.
22-20-24 Roper, Chicago Okla. Oil 1*.
Major County—
36-22-14 Cheyenne Basin, Texas Prod. Co. 1*.
9-22-9w Ratcliff, Bradstreet Oil 1.
36-21-11 Gray, Frantz & Slick 1*.
Woodward County—
34-20-20 Bell, Beard O. & G. 1*.
Kingfisher County—
7-19-5w James, Jens Marie et al 1*.
14-17-5w Jeffy McCord, Casing Royalty Co. 1*.
25-17-5w Sickerson, Carson et al 1.
30-16-9w Burson, Pansey O. & G. 1*.
31-15-7w Lewis, F. & M. Oil 1*.
17-15-6w Creaves, Chi Oil Co. & Nichols 1*.
Logan County—
32-19-3w Newman, Buford & Brimm Oil 1*.
5-19-2w Ohm, Gilliland Oil 1.
28-18-4w Moore, Franklin Oil Assn. 1.
9-18-2w Wyatt, Behoma Oil 1*.
28-16-1w Lair, Pluto O. & G. 1.
36-15-2w Johnson, Okla. Drlg. Co. 1*.
23-15-1e Pritchard, Magnolia Pet. 1.
Dewey County—
7-18-15 Chronister, Meyers et al 1*.
22-16-18 Elders, A. D. Morton 1*.
Cimarron County—
2-5n-5e Schook, Campbell & Riley 1*.
16-1n-7e Wells Ranch, Beaver O. & G. Co. 1*.
Pottawatomie County—
4-5n-5e McFarland, Riverside Oil 1*.
13-11-3e Floyd, Gwinnup et al 1*.
13-10-2e Howell, Ossie Oil Co. 1.
23-10-4e Madgett, North American Oil 1*.
24-8n-4e Stoner, Maud Oil Products Co. 1*.
19-7n-4e Neghan, McMan 1*.
18-7n-5e Vinson, Maud Oil Products 1*.
10-6n-2e McGahey, Davie Detrick 1*.
9-5n-3e Ball, Day Oil 1.
4-5n-5e Fiddler, Halmond Osmond et al 1*.
Pontotoc County—
31-5n-5e Lewis, La Salle et al 1*.
32-5n-5e Brown, Brinson et al 1.
19-5n-7e Dener, Harper et al 1.
24-4n-4e Floyd, C. J. Wrightsman 1.
5-4n-4e Starritt, Craig et al 1*.
3-4n-6e McDaniel, American O. & R. Co. 1.
16-4n-6e Curry, American O. & R. Co 1.
17-4n-6e Witherspoon, Amer. O. & R. Co. 1*.
18-4n-6e McClure, Bryan & Gillett 1.
27-4n-6o Parry, Pilgrim Pet. Co. 1.
31-4n-6e Harden, Texas P. C. & O. Co. 1.
34-4n-6e Norris, Smith & Lancaster 1*.
14-4n-7e Norris & Beck, Howarth O. & G. Co. 1.
28-4n-7e Falkner, Hughes et al 1*.
34-3n-4e Norris, Haney et al 1*.
15-3n-6e Hays, Galloway et al 1*.
6-3n-7e Lloyd, Lloyd & Smith 1.
Roger Mills County—
15-15-26 McClure, Twin Hills Oil 1*.
3-13-26 Unknown, Trio Oil 1*.
Custer County—
17-13-14 Cutfinger, Magnolia Pet. 1.
34-13n-14 Unknown, Hoover Oil 1*.
Washita County—
9-8n-15 Prettears, McCoy et al 1*.
Greer County—
3-7n-22 Johnson, Neal et al 1.
26-7n-22 Bowman, White & Debolt 1.
17-7n-21 Unknown, Morton & Neal 1*.
4-3n-22 Van Vector, Boso & Terrill 1*.
Kiowa County—
3-7n-17 Countryman, Aubyme Oil 1*.
13-7n-16 Unknown, Alcorn Oil 1*.
20-7n-16 Williams, Connor et al 1.
Grady County—
19-6n-5w Cook, Langston O. & G. 1*.
14-5n-8w Irwin, Cotton Patch Oil 1.
23-5n-8w Edmondson, Skelly Oil 1.
25-5n-8w Reed, Briscoe et al 2.
26-5n-8w Farwell, Little Nick Oil 2.
22-5n-7w Unknown, Badgett & Hughes 1.
28-3n-5w Pearcay, Magnolia Pet. 1.
Jackson County—
36-2n-23 Unknown, J. D. Wade 1.
15-1s-23 Snodgrass, J. R. Abernathy 1.
Comanche County—
24-2n-10 Cox, Cherry & Coush 1*.
29-1n-12 Bentley, Bentley et al 1.
25-1n-9 Kennedy, Humble Oil 4.
Canadian County—
34-13-9w Dawson, Thomas Revelle 1.
2-13-8w Setter, Carroy & Zwiechar 1*.
Oklahoma County—
36-11-3w School land, Firestone Oil 1.
Cleveland County—
31-10-4w Holland, Garr Oil 1*.
Garvin County—
21-4n-1w Florence, Bedman et al 1*.
10-3n-3e Hattie, Heath & Bauman 1*.
13-2n-3e Delbeck, Goldenline Oil 1*.
11-1n-3w Harkreader, Concord Oil 5.
14-1n-3w Mays-Newberry, Magnolia Pet. 4.
16-1n-3w Orr, Magnolia Pet. 9.
18-1n-3w Derdyn, Simms Oil 1.
35-1n-3w Riddle, T. P. C. & O. Co. 1.
8-1n-2w Franklin, Tidal Osage Oil 1.
18-1n-1e Richardson, Benders et al 1*.
9-2n-2e Gibson, Black Pet. 1*.

Coal County—
24-2s-5e Payte, Bearman et al 1*.
Marshall County—
24-5s-5e Rice, Reese et al 1.
24-5s-5e Rice, Carpenter et al 2.
Ladmer County—
7-5n-16 Hunt, P. & F. Pet. 1.
10-5n-21 Young, J. S. Cochran 1.
Lefiore County—
17-5n-25 Lucas, H. Randall 1.
Pittsburg County—
26-5n-13 Townsend, E. T. Richards 1*.
26-5n-15 Cheadle, Eugenia Oil 1*.
Haskell County—
4-9n-18 Phillips, Haskell Drlg. Co. 1*.
27-9n-18 Curry, J. D. Clark 1.
4-9n-20 Dewbre, H. U. Bartlett 1*.
Sequoyah County—
5-14-26 Faulkner, Industrial O. & G. 1.
23-11-25 Earl, Eureka O. & G. 1.
Rigs, 9; wells drilling, 124; total, 133.

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	2	60	1	0
Marion	1	0	1	0
Greenwood	23	2,067	0	0
Cowley	14	3,299	4	2
Chautauqua-Elk	11	250	7	0
Montgomery	13	290	10	0
Miscellaneous	27	160	19	5
Total November	92	6,126	42	7
Total October	74	8,288	35	2
Difference	18	2,162	7	4

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Butler	4	17	21
Marion	0	1	1
Chautauqua-Elk	3	29	32
Cowley	20	51	71
Greenwood	23	27	50
Montgomery	8	42	50
Sumner	2	14	16
Russell	1	11	12
Miscellaneous	19	120	139
Total November	80	312	392
Total October	68	306	374
Difference	12	6	18

WELLS COMPLETED

MONTGOMERY COUNTY

13-32-12 Haines, Red Bank Oil 3..... 30
13-33-16 Zutz, Simcox et al 1..... 200
13-33-16 Thompson, Kors et al 2..... 160
5-31-15 Scott, Severy & Crandall 1.... dry
13-33-16 Thompson, Simcox et al 1.... dry
13-33-14 Levenwood, S. C. Canary 1.... dry
14-33-16 Zutz, Kors et al 1..... dry
17-33-16 Linscott, J. R. Thompson 1.. dry
25-34-14 Buster, Charles Blye 1..... dry
23-31-13 Edwards, Sharpless, Stark et al 1 ..... dry
34-31-14 Shoewalker, Burton & Aken 1.. dry
15-32-14 Vaughan, Tolbert & Haslett 1 dry
1-33-16 Bowley, Danciger et al 1..... dry

Wells completed 13
Production 390
Dry 10
Gas 0

ELK AND CHAUTAUQUA COUNTIES

13-29- 8 Porter, C. E. Roth et al 7.... 120
14-29- 9 Denton, Denton et al 9..... 45
8-34- 9 Wiley, Pulaski Oil 1 ..... dry
12-30- 9 Brown, Service Oil 1..... dry
Donnell, Clark Drilling Co. 2.. dry
25-30-10 Thompson, Southwestern Pet. 1 dry
11-29- 8 Porter, Sinclair Oil 2..... dry
33-33-10 Wiggam, Page & McKay 1.... 50
8-30- 9 Denton, Watchorn Oil 4..... 35
6-32-10 Aulls, Thompson 1..... dry
36-33-11 Bruen, ONeal & Bruen 1..... dry

Wells completed 11
Production 250
Dry 7
Gas 0

COWLEY COUNTY

17-33-3e Thurlow, Waite Phillips & Marland Oil Co. 1..... 482
20-33-3e Wertman, Waite Phillips & Marland Oil 5..... 509
Johnson, Waite Phillips & Marland Oil 1 598
33-31-4e Brasher, O. W. Dickerson et al 1 ..... dry
21-32-6e Bolock, Murphy et al 1..... dry
20-34-4e Baird, Joe Nathon & Brinn 3.. dry
13-32-4e Brant, Arkansas Fuel Oil Co. 1 20
20-33-3e Wertman, Waite Phillips & Marland Oil 4 1400
Wertman, Waite Phillips & Marland Oil 6 200
34-33-4e Dowler, Hartman & Skaer et al 1 ..... dry
30-30-6e King, White Eagle Oil 1 15
20-34-4e Goff, Joe Nathon et al 1..... gas
Baird, Phillips Pet. 1 ..... gas
6-31-6e Eastman, Empire G. & F. 4..... 75

Wells completed 14
Production 3299
Dry 4
Gas 2
Gas production 8,300,000

GREENWOOD COUNTY

19-22-10 Browning, R. G. Gillespie 6.... 150
32-23-11 South, Tidal Oil 2..... 200
32-22-11 DeMalorie, York State Oil 3... 50
2-22- 9 Green, Transcontinental Oil 1 100
22-24- 9 Hendrickson, Jake Reverly 5.. 40
6-22-10 Cartwright, Federal Oil 7..... 150
14-24-12 Sullivan, Houston - Oklahoma Oil 9 25
19-25- 9 Ladd, Mid-Kansas Oil 8..... 50
6-25-12 Gilroy, Sinagne et al 3..... 5
1-24- 9 Cartwright, Roth & Mission & Faurot 4 150
24-24- 9 Marshall, Roxana Pet. 4..... 150
26-25- 9 Moss, Darby Oil 12..... 75
1-23-10 Bell, Fisher, Lauck & Moore 1 dry
22-24- 9 Hendrickson, Polhamus et al 3 dry
5-25- 9 Corrington, Basom et al 1..... dry
20-22-10 Browning, Sinclair 6 200
23-24- 9 Osmundson, Gypsy Oil 2 180
19-24-12 Johnson, Lima-Iola Oil 1 75
26-25- 8 Jackson, Pierce et al 2 15
13-23- 9 Teeter, Phillips Pet. 1 392
21-22-10 Martindale, Mid-Kansas Oil 12 60
16-22-10 Pixlee, Buck et al 1 ..... dry
1-25- 9 Hawthorn, Dingee et al 1 .... dry

Wells completed 23
Production 2067
Dry 5
Gas 0

SUMNER COUNTY

12-31-1w Stewart, Phillips Pet. 1..... dry
3-35-2e Olson, Prairie Oil 1..... dry
23-24-2e Padgett, Alcorn Oil 1 ..... gas
1-33-1w Ramsey, Tidal Oil 1 ..... dry

Wells completed 4
Production 0
Dry 3
Gas 1
Gas production 30,000,000

WILSON COUNTY

36-30-16 Small, Elmer P. Sewell 1.... gas
36-29-14 Monson, Bremeger, Spencer & Wilson 1 ..... dry
29-29-15 Bredger, Brineger & Spencer 1 dry
1-30-14 Smith, Ladow & Stryker 1 .... dry
34-28-15 Farwell, Zack Barnes 2..... dry
13-28-15 Morse, Rhodes & French 1.... dry

Wells completed 6
Production 0
Dry 5
Gas production 75,000,000

BUTLER COUNTY

Rigs

32-24-4e Penner, Vickers Pet. 1.
33-24-8e Lample, Tom Miller 1.
32-26-6e Palmber, Foraker et al 1.
27-28-5e Cameron, Elwell et al 2.

Wells Drilling

21-24-3e Harder, Walter Hoyt 1.
31-24-4e Maxwell, Potwin Oil 1.
36-24-4e Barkemeyer, Robinson et al 1.
27-24-6e Burson, Frank & Imperial Oil 1.
3-25-3e Brainerd, E. B. Shawver et al 1.
7-26-5e Higgins, Allen et al 2.
17-27-7e Knox, Braden Bros. & Ellis 2.
10-28-6e Slaybaugh, Mid-Kansas Oil 2.
30-29-3e Robins, Walters Pet. 1.

Shut Down

18-24-5e Joseph, Kightlinger et al 1.
10-26-3e Clancy, Hawkins 1.
32-26-6e Palmer, Spatta Oil 1.
24-27-4e Weidline, Weidline et al 1.
25-27-4e Skaer, Peoples O. & G. 1.
33-27-7e Hamilton, Beckers et al 1.
22-28-6e Pettit, John Sharp 1.
12-29-6e Lammonyon, Tobin et al 1.
Rigs, 4; wells drilling, 17; total, 21.

CHAUTAUQUA AND ELK COUNTIES

Rigs

5-33-12 Fish, Garner et al 1.
13-29-8e Hanna, C. E. Roth et al 3.
Porter, Empire G. & F. 2.

Wells Drilling

8-32-11 Cunninghafn, Denman Bros. 1.
16-32-13 Hoover, Glidden Oil 1.
24-33-10 Holroyd, H. P. Glidden 1.
10-34-9e Fisher, T. B. Slick 1.
3-35-8e Holroyd, Buck et al 1.
27-29-9e Thompson, Wilson & Phillips 1.
28-29-9e Perkins, Mitchell & Ark Fuel Co. 1.
28-29-9e Wheeler, Lemmon et al 1.
34-29-9e Herrod, Dietrichs et al 3.
27-29-13 Marryfield, J. G. Buell et al 1.
30-30-11 Beaty, Pennok Oil 2.
16-30-13 Hawks, Thompson & Moore 1.
33-30-13 Hastings, Buell & Curtis 1.
21-31-9e Stiles, Triplet Oil 1.
14-31-10 Chaffin, Pure Oil 1.
5-31-11 Osborne, Crawford & Reagan 1.
15-31-12 McCurry, Gibson et al 1.

Shut Down

1-33-8e Reed, Hatlock et al 1.
11-33-10 Chamberlain, Fisher Oil 1.
8-29-9e Thompson, C. C. Nye 1.
28-29-9e Smith, Ohio Fuel Oil Co. 2.
4-29-10 Baughman, Imperial Drlg. Co. 1.
10-30-9e Kyser, Imperial Drlg. Co. 1.
17-30-9e Hyde, Ritchey & Moore 1.
19-30-9e Packard, Ritchey & Moore 1.
5-30-12 Reder, Kurtz et al 1.
22-31-8e Ewers, Denman Bros. 5.
21-31-9e Hand, Anderson Bros. 1.
18-32-10 Green, Page et al 1.
Rigs, 3; wells drilling, 29; total, 32.

COWLEY COUNTY

Rigs

1-30-7e Mahanna, Arkansas Fuel Oil 1
21-31-6e Eddie, Marland Oil 1.
19-32-3e Waite, Carter Oil 1.
Conrad, T. B. Slick et al 1.
Waite, T. B. Slick et al 1.
13-32-4e Rockwell, Marland & Neely 1.
24-32-4e Wallace, J. A. Hull 9.
Ditmer, J. A. Hull 4.
7-32-5e Crosby, Arkansas Fuel Oil 1.
17-33-3e Thurslow, Waite Phillips Co. 1.
18-33-3e Patterson, Waite Phillips Co. 1.
20-33-3e Glasgow, Waite Phillips & Marland Oil 2.
Wertman, Waite Phillips & Marland Oil 7, 8.
Johnson, Waite Phillips & Marland Oil 4, 5.
21-33-3e Snyder, Waite Phillips & Marland Oil 1.
29-33-3e Beatty, Waite Phillips & Marland Oil 1.
20-34-4e Goff, Joe Nathon et al 2.
5-35-5e Sterling, Springstad & Overlease 1

Wells Drilling

14-30-4e Magnuson, Cassoday Oil 5.
16-30-4e Starkey, C. E. Ash 1.
29-30-5e Dunbar, Alcorn Oil 1.
30-30-6e Bice, Lewis Oil 1.
31-30-6e Crouch, Titus 3.
Crouch, Lewis Oil 3.
10-31-3e Shafer, Trees Bros. 1.
11-31-3e Clark, Arkansas Fuel Oil 1.
13-31-5e Harrod, Southwestern Pet. 1.
19-32-3e Carson, T. B. Slick 1.
26-32-3e Tinker, Marland Oil 1.
12-32-4e Holt, Neely & Marland Oil 1.
13-32-4e Lierman, Marland Oil 1.
24-32-4e Shannon, Gypsy Oil 3, 4.
Kukuk, Buffalo Trust Co. 7, 8.
Ditmer, J. A. Hull 2, 3.
31-32-4e Weir, Day & Bunnell 1.
34-32-4e Poor Farm, Charles E. Dye et al 1.
36-32-4e Keithley, Watchorn O. & G. 1.
3-33-3e Poor, Gypsy Oil 1.
9-33-3e Johnson, Waite Phillips 1.
Spruen, Roxana Pet. 1.
Graham, Alcorn Oil 2, 3, 4.
10-33-3e Wright, Alcorn Oil 1, 2.
Bower, Alcorn Oil 1.
Spruen, Roxana Pet. 1.
20-33-3e Glasgow, Waite Phillips & Marland Oil 1, 5.
29-33-3e Hansen, Waite Phillips Co. 1.
Johnson, Waite Phillips & Marland Oil 1.
34-33-3e Shehan, Marland & Alcorn Oil 1.
17-34-3e Baird, Shawver & Elwell 1.
33-34-3e Hocastaw, Rich et al 1.
1-35-7e Olsen, T. B. Slick 7.

Shut Down

24-30-6e Ward, Chas. Christy 1.
33-30-7e Clover, Scott et al 1.
26-31-3e McKinley, Arkansas Fuel Oil 1.
14-31-4e Sherwood, Trees Oil 1.
18-31-5e Shannon, Arkansas River Gas 1.
24-32-4e Ditmer, J. A. Hull 5.
4-33-3e Alexander, Waite Phillips 1.
20-33-3e Backus, Waite Phillips 2.
24-33-6e Sandstrum, Torrence & Torrence 2.
20-34-4e Baird, Joe Nathon & Brinn 2.
10-35-5e Warren Trees Oil 1.
Rigs, 20; wells drilling, 51; total, 71.

GREENWOOD COUNTY

Rigs

19-22-10 Browning, Sinclair Oil 7.
22-22-11 Cravet, Phillips Pet. 2.
28-22-11 Clark, Phillips Pet. 8.
15-23-9e Teeter, Skelly Oil 1.
28-23-10 Thrall, Mission Oil & Roth 42.
29-23-10 Thrall, Mission Oil & Roth 23.
Thrall, C. E. Roth and W. Phillips 2.
31-23-10 Martindale, Mid-Kansas Oil 13.
32-23-10 McKee, Phillips Pet. 17, 18, 19.
5-23-11 Seeley, Phillips Pet. 12.
8-23-11 Cloptojn, Empire G. & F. 12.
23-24-9e Wiggins, Roger & Mission 3.
27-24-9e Wiggins, Carter Oil 1.
15-24-12 Johnson, Skelly Oil 3.
28-24-13 Morris, Kittle et al 1.
3-25-9e Hover, Phillips Pet. 5.
4-25-9e Hurley, Pure Oil 3.
19-25-9e Ladd, Mid-Kansas Oil 6.
30-25-13 Brown, Cory et al 1.
28-26-13 Ingersol, Maitland Oil 1.
14-24- 9 Heilman, Prairie Oil 8.

Wells Drilling

8-22-10 Pixlee, Theta Oil 1.
12-22-10 Sowder, O. J. Connell et al 1.
13-22-10 Derbyshire, Pryor & Lockhart 1.
19-22-10 Browning, R. G. Gillespie 7.
22-22-11 Richards, Fisher, Lauck & Moore 1.
Bersie, J. H. Milliken 2.
32-22-11 DeMalorie, York State Oil 4.
2-23-9e Green, J. B. Murphy 1.
31-23-10 Martindale, Mid-Kansas Oil 8.
32-23-10 Thrall, Mission Oil 5.
27-24-9e Hill, Fontaine et al 1.
23-24-10 Edwards, Jno. Edwards et al 1.
31-24-13 Cox, Chas. Christy 1.
32-24-13 Wright, Smith & McGinnis 1.
12-25-8e Beckett, Roth & Farout 2.
8-25-9e Gregg & Coulter, Connell & White Eagle 1.
6-25-13 Gilry, Bisagno et al 1.
24-26-9e Weivhing, Landers et al 1.
26-26-9e Dermick, Miller & Jarrett 1.
28-26-9e Kuhn, Magnolia Pet. 2.
25-26-11 Kiser, T. E. Miller et al 1.
18-28-9e Dixon, Jamison et al 1.

Shut Down

34-22-13 Kraft, Braden Bros. 3.
36-23-9e Teeter, Derby & Polhamus 1.
7-25-9e Wilkinson, S. M. Griggs 1.
27-25-9e Sallyards, Duncan et al 1.
14-25-10 Norman, Jno. Jackson 1.
Rigs, 23; wells drilling, 27; total, 50.

MONTGOMERY COUNTY

Rigs

31-31-14 Faler, Remier et al 1.
10-31-16 Hagen, Fennant Oil 1.
2-32-13 Nelman, Dunn et al 1.
12-32-16 Good, Cross Producing Co. 1.
2-33-16 Rundell, Frank Swift 1.
28-34-14 Owens, Phillips Pet. 1.

Wells Drilling

36-31-14 Shoewalker, Osage Oil 1.
13-31-15 West, Trees Oil 1.
19-31-16 Clark, Pennant Oil & Goldrick 1.
35-31-16 Murphy, McMannus & Gibson 1.
19-31-17 Busby, Ark. Fuel Oil 1.
22-31-17 Botkin, Shyrock et al 1.
13-32-14 Sloan, Galbraith et al 1.
23-32-14 Cox, Hobson et al 1.
28-32-14 Coleman, Red Bank Oil 3.
33-32-14 Good, Homer T. Lamb 3.
21-32-15 Edwards, Black, Landon & Prairie 1.
24-32-16 Surber, Red Bank Oil 1.
1-33-13 Foreman, F. M. Clark 1.
3-33-14 Kick, Smith & Thomas 1.
18-33-14 Brooks, Dexter & Cook 1.
31-33-15 Farlow, Talbott et al 1.
9-33-16 Budke, Sturnburg et al 1.
11-33-16 Zutz, Wilkins et al 1.
12-33-16 Good, John Harwood et al 1.
13-33-16 Remington, Reed & King 1.
Zuntz, Independence Fuel Oil 2.
32-33-16 Clark, Dunn et al 1.
4-33-17 Hall, Townsell et al 1.
16-33-17 Georgen, Thayer et al 1.
22-33-17 Leff, Appleman et al 1.
16-34-15 Dobson, Morrison & Everly 1.
23-34-15 Truby, O. A. Crane 1.
31-34-15 Reed, Connelly et al 1.
10-34-16 Ingram, Fisher & Lauck 1.
2-35-13 Noble, Prairie, Black & Landon 1.
12-35-14 Van Deent, Orlando Pet. 1.
6-35-15 Taylor, Keystone Oil 1.
Dynell, S. C. Canary 2, 3.
1-35-16 Fairbond, Overfield & French 1.
2-35-13 Noble, Prairie Oil 1.
21-32-15 Clemmer, Prairie Oil 1.

Shut Down

24-31-13 Dickey, Southwestern Gas 1.
21-31-17 Tavender, Keithley et al 1.
9-32-14 McVey, Foster et al 1.
32-32-14 Morris, O. N. Pecker et al 1.
25-33-14 Mason, Vanniman et al 1.
3-33-17 Bellairs, Coffeyville Brick Co. 1.
25-34-13 Patterson, H. R. Nelson et al 2.
Rigs, 8; wells drilling, 42; total, 50.

SUMNER COUNTY

Rigs

12-30-4w Smith, Phillips Pet. 1.
9-33-1e Harkins, Waite Phillips 1.

Wells Drilling

16-30-1w Hitchcock, Champlin Refg. 1.
17-30-1w Kraft, Champlin Refg. 1.
27-32-2w Brummett, Phillips Pet. 1.
29-32-2e Veail, Phillips Pet. 1.
8-33-3w Felt, Phillips Pet. 1.
25-33-2e Wood, Brady Bros. 1.
34-34-1w Hayes, Shawver & Sutter 1.
29-34-2e Works, Phillips Pet. 1.
15-35-1e Pickett, Floyd O'Howarth 1.
16-35-1e Stewart, National Union Oil 1.

Wells Shut Down

8-30-2e Stubbs Land Co., McKnab & Burt 1.
7-30-1w Slutter, Ellis et al 1.
16-30-1w Hitchcock, Champlin Refg. 2.
15-35-1e Walker, Floyd O'Howarth 1.
Rigs, 2; wells drilling, 14; total, 16.

MISCELLANEOUS

WELLS COMPLETED

Anderson County—
15-21-20 Ware, Pioneer-Mutual Oil 6.... 60
7-21-20 Johnson, Welda Pet. 2..... 40
18-21-21 Babb, Peerless Oil 2..... 60
Barton County—
21-19-12 Brown, Streeter & Stearns 1.. dry
Bourbon County—
13-24-21 Purdum, Grant Colby 3..... gas
Purdum, Grant Colby 4..... gas
Butler County—
27-28-5e Meyers, Ramsey et al 1..... 50
23-28-7e Brewer, Rich et al 2..... 10
34-25-6e Schwartz, Dick Davidson & G. F. G. Oil 1..... dry
Coffey County—
13-21-15 Allen, Thad O'Day 1..... dry
Chase County—
10-22-9e Hughes, Phillips Pet. 1..... dry
Marion County—
30-23-5e Bennington, Phillips Pet. 1... dry
Neosho County—
7-28-18 Seidle, Wilys Bros. 1..... dry
2-28-17 Myers, Eakin et al 1..... gas
Osage County—
12-18-14 Williams, Moyer et al 1..... dry
Osborne County—
20-10-11 Forman, Dehli Oil 1..... dry
Rice County—
35-19-6w Dees, Rino Oil 1..... dry
Russell County—
11-12-12 Murphy, Merriam et al 1..... dry
14-12-14 Haberer, Skelly Oil 1..... dry
20-12-15 Milke, Amerada Pet. et al 1... dry
Sedgwick County—
27-29-1e Fleshman, Cosden Oil 1..... dry

Wells completed 13
Production 120
Dry 13
Gas 2
Gas production 3,100,000

MISCELLANEOUS

Rigs

Coffey County—
33-20-15 Andrews, Sunbeam Pet. 1.
13-22-13 Beyer, Braden Bros. 1.
Ellis County—
33-15-20 Murphy, Faler et al 1.
Ellsworth County—
6-14-9w Kasper, John Herron et al 1.
Harvey County—
4-23-2e Hawk, Mason & Ralston 3.
Lincoln County—
29-12-8w Rohwer, Eisenhour et al 1.
McPherson County—
3-17-2w Anderson, Wynn et al 1.
3-18-2w Anderson, Young et al 1.
Marion County—
20-22-5e Martin, Phillips Pet. 1.
Morris County—
32-14-7e Barber, Kline et al 1.
Neosho County—
9-27-20 Haynes, Shaffer O. & R. 1.
Ness County—
35-18-21 Ryarsee, Bell & Sarton 1.
Pottawatomie County—
17- 9-12 Stewart, Crawford et al 1.
31- 9-12 Greschaber, Crawford et al 1.
Rooks County—
30- 6-17 Law, Marland Oil 1.
Russell County—
8-12-15 Oswald, Valerius O. & G. 3.
Sedgwick County—
34-26-1e Jadin, Wichita O. & G. 1.
Wilson County—
2-27-14 Brown, Rhodes & French 1.
16-30-15 Fulbright, Ladow & Stryker 1.
Woodson County—
13-24-12 Rhea "C" Skelly Oil 1.

Wells Drilling and Shut Down
(Shut down wells indicated by*)

Barber County—
33-30-14 Hargiss, B. B. Brown 1.
Barton County—
11-16-12 Schauf, Jasper & Beschka 1*.
27-18-12 Sooy, Cheyenne O. & G. 1*.
21-18-12 Teel, Haynes & Taul 1.
22-18-13 Everleigh, Mt. States O. & G. 1.
17-19-11 Smith, Huffine et al 1.
Chase County—
19-19-8e Holsinger, Alters et al 1*.
19-21-5e Griffity, Security Oil 1*.
21-22-8e Crocker, J. A. Corbett et al 1.
Clark County—
20-32-21 Morrison, Watchorn O. & G. 1.
Cloud County—
6- 6-4w Murdock, Livingston et al 1*.
Coffey County—
36-21-14 Davidson, Cross et al 1*.
9-21-16 Miller, Kelly Bros. 1*.
14-23-13 Elliott, Manhattan Oil 11*.
Decatur County—
25- 2-26 Reager, Marland Oil 1.
Ellis County—
16-11-17 Demis, Sparks et al 1.
14-12-16 Smith, Jas. Davis et al 1*.
18-13-17 Polifke, J. Alan Harvey 1.
Ellsworth County
24-14-7w Walker, United Pet. 1*.
Finney County—
36-21-30 Wann, Garden City O. & G. 1*.
Geary County—
9-12-6e Wright, Liberty Texas Oil 1*.
30-13-6e Foster, Liberty Texas Oil 1*.
Graham County—
23- 8-24 Taxton, Keys Bros. & Marine 1.
Hamilton County—
5-26-41 Ransom, Wood Oil 1.
Harvey County—
27-22-2e Symons, S. A. Hunter 1*.
5-23-1e Coertz, Union Oil 1*.
4-23-2e Masters, Derby Oil 1*.
9-23-2e Gats, Wahn et al 1*.
4-23-2e Hawk, Derby Oil 1.
11-24-2e Thompson, Shaffer O. & R. 1.
Hodgeman County—
19-21-22 Frizzell, Krueger et al 1*.
Jefferson County—
13- 9-19 Edwards, Northern Counties Oil 1*.
Kingman County—
34-27-7w Graber, Hale et al 1*.
Labette County—
14-31-17 Sparks, Ark. Fuel Oil 1.
33-32-20 Burns, C. W. Willy et al 1*.
1-33-17 Hornback, T. R. Cowell et al 1.
35-33 -17 Evitts, Lampton & Shannon 1.
26-33-18 Ralston, W. J. Shults et al 1.
5-35-20 Lips, Wantland et al 1.
Lincoln County—
19-11-6w Stone, Scott & Collins 1.
22-11-6w Lewis, Pope & Powell 1*.
16-11-7w Crawford, Amerada Pet. 1.
31-12-10 Lambert, Berry & Rosenthal 1.
36-13-7w Paul, United Pet. 1*.
19-13-9w Jellison, Equity Oil 1*.
Lyon County—
4-21-12 Greider, Jennings Brothers 1.
20-21-12 Haughton, Southwestern Pet. 1.
22-21-21 Jeanerett, Balaire et al 1.
31-21-12 Jones, Schwartz et al 1.

McPherson County—
29-18-2w Anderson, Waugh & Casey 1*.
21-20-2w Linn, Krown & Krown 1*.
26-21-5w Thiesson, Ramona Oil 1*.
Marion County—
21-20-4e Carpenter, Leeward Pet. 1.
17-21-4e Warner, National Ref. Co. 1.
32-21-4e Equity Security, Morgan et al 1*.
5-22-4e Townsend, Watchorn O. & G. 38.
Mitchell County—
23- 6-9w Elder, Wilcox O. & G. 1.
10- 9-8w Beeler, Alcorn Oil 1.
Nemaha County—
19- 3-11 Meyers, Nemaha O. & G. 1*.
Neosho County—
31-27-18 Tennis, Parkins et al 1*.
35-29-19 McMullen, Burton & Aken 1.
Osborne County—
9-10-14 Bealby, Knight et al 1*.
Osage County—
3-15-15 Unknown, Baker et al 1*.
27-15-16 Baily, West et al 1*.
8-17-17 Neil Est., Mull-Vit Dev. Co. 1*.
Phillips County—
25-4-16 w Hull, Frost Drilling Co. 1.
13-5-18w McKinley, Good & Craise 1*.
Pottawatomie County—
11-10-12 St. Mary's, Crawford et al 1*.
Reno County—
3-22-6w Sallee, Hipple & Childs et al 1*.
13-23-8w Short, Reno County O. & G. 1*.
2-25-6w Mohr, Jennings, Pells & Starr 1*.
28-25-6w O'Halloran, George Gano, trustee 1*
5-26-4w Williams, M. M. Travis et al 1.
Rice County—
10-18-6w Walker, Jasper & Beschka 1*.
11-19-7w Deeds, Pryor & Lockhart 1*.
7-20-6w Bush, Emerson Carey 1*.
21-20-6w Barnes, Stamey et al 1.
25-20-6w Johnson, Midland Oil 1*.
15-21-10 Taylor, H. T. Proctor et al 1*.
Riley County—
26-10-6e Marks, Pawnee O. & G. 1*.
20-10-7e Thierer, Douglass & Youker 1*.
Rooks County—
7-8-20w Saindon, Keys Pet. 1*.
Rush County—
10-18-16 Moore, Morgan & Downing 1.
22-18-19 Kirby, Raber et al 1*.
Russell County—
13-11-13 Pososhill, Sawtelle et al 1*.
23-12-11 Dick Ritchey & Moore 1.
33-12-11 Cooper, Pomeroy et al 1.
8-12-15 Oswald, Streeter & Stearns 1, 2.
24-12-15 Haise, P. & R. Corp. 1.
24-13-13 Harbaugh, Lee Bullock et al 1*.
1-14-11 Diessroth, Garfield Buell 1.
9-14-15 Mermis, P. & R. Corp. 1.
36-15-13 Seller, Alcorn Oil 1.
29-11-15 Dodge, White Eagle et al 1.
13-13-14 Hill, Prairie Oil 1.
Saline County—
29-14-2w Davis, L. S. Johnson 1*.
26-15-2w Shelton, Brown & Woodard 1.
15-15-4w Holmquist, Thralls et al 1*.
Sedgwick County—
14-28-2e Landon, E. B. Merriam 1.
14-29-2w McMillen, Curtis & Frost 1.
2-29-2e Fleming, Higgins 1.
29-29-2e Hunsaker, Hartman & Skaer & Johnson 1.
Seward County—
34-34-34 Wood, G. T. C. Dev. & Defender Pet. 1*.
20-33-33 Seeley, Seward O. & G. 1*.
Stafford County—
29-21-11 Sifers, King & Langston 1*.
Trego County—
9-11-22 Kyser, A. D. Morton & McCoy 1.
16-11-24 Davis, Keys Bros. & Marine. 1.
5-11-25 Walsh, Keys Pet. Co. 1*, 2*.
Wabaunsee County—
15-13-12 Hendrickson, Williams et al 1*.
Washington County—
9- 5-5e Wickham, Barnes O. & G. 1*.
Wilson County—
17-27-16 Bushfield, Mortimer & Walker 1.
20-27-17 Swank, Phipps & Fisher 1.
2-28-13 Newman, Gwinnup et al 1.
24-28-16 Van Vickle, Foster Oil 1.
35-29-14 Odell, Callahan et al 1.
31-29-17 Ford, Callahan et al 1.
31-30-14 Asheraff, Kors et al 1.
22-30-15 Edwards, Bryson & Stinson 1.
24-30-15 Jones, Cole & Neff 1.
29-30-17 Smalley, West & Williams 1.
32-30-17 Thompson, Hauck & Bevore 1.
Woodson County—
23-23-13 Bahr, Peerless O. & R. 8.
31-23-15 Weide, Franklin Oil 1.
32-23-15 Weide, Rodgers & Hinkle 4.
1-24-14 Weide, Ark. Fuel Oil 1*.
2-24-14 Allen, Iowa-Kansas Dev. 1.
22-25-14 Fry, Curtis Oil 1*.
4-26-14 Lauber, Herman & Oglesby 1*.
20-26-17 Solomon, Equity Oil 1*.
Rigs, 20; wells drilling, 131; total, 151.

EAST CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod. Dry	Gas	Rigs	Drg.	Ttl.
Navarro	19	7,921	3	1	9	31	40
Limestone	1	2,500	0	0	0	3	3
Freestone	1	8,000	0	0	14	5	19
Miscellaneous	3	0	2	1	6	40	46
Total Nov.	24	17,291	5	1	29	79	108
Total Oct.	19	7,868	5	0	14	74	88
Difference	5	9,423	0	1	15	5	20

WELLS COMPLETED
NAVARRO COUNTY

Powell District—
Collins, Garland Kent 1 ..... dry
Cerf, E. L. Smith Oil Co. 1 ..... dry
Bush, Tidal Oil 1-A 40
Kent, Texas-Magnolia 29..... 30
Ramsey, U. S. Tex Oil Corp. 3 15
Boyd, Bridwell & Gray 2..... 10
Harvard, T. & B. V. R. R. 7 6
Currie District—
Longbotham, Snowden & McSweeney 11..1250
Longbotham, Snowden & McSweeney 12. 250
Harrow, Ben Strotman et al 1 3600
Bounds, Trapshooters Dev. Co. 5..... 125
Richland District—
Allison, Boyd Oil 1 ..... dry
Swink, Atlantic O. P. Co. 7 300
Elkin, Gulf Production Co. 3 590
Davis, Meade et al 2 80
Swink, Sun Oil Co. 1 ..... gas
Brown, Sun Oil 15 250
Brown, Sun Oil 17 375
Davis, Tucker & Fox 9 1000

Wells completed 19
Production 7921
Dry 3
Gas 1
Gas production 13,000,000

MISCELLANEOUS
Falls County—
Stallworth, Myron & Stallworth 1 .... dry
Leon County—
Carrington, Mexia Marquest Co. 1 ..... abd
Limestone County—
Kennedy, Frank Smith et al 1 ..... gas
Boyd, Boyd Oil Co. 1 2500
Freestone County—
Simmons, Boyd Oil 1 8000

Wells completed 3
Production 10500
Dry 2
Gas 1
Gas production 2,500,000

NAVARRO COUNTY
Rigs
Barry, G. Kent 2.
R. I. Kent, Humble O. & R. 2.
Boyd, Smith et al 1.
Keith, Tidal Oil 9.
Boyd, Williams & Pyle 1.
Quimby, Moore Brothers 1.
Westbrook, Elliott & Nivolle 1.
Davis, Derby Oil 2.
Kent, Humble O. & R. 3.

Wells Drilling and Shut Down
(Shut Down Wells Indicated by *)
English, Pure Oil 5.
Bounds, Brothers Oil 7.
Morrow, J. K. Hughes Oil 4.
Coffey, Garland Kent 1.
Swink, John Hoosier 3.
Richards, McIntyre et al 1.
Webb, Boyd Oil 9.
Davis, Derby Oil 2*.
Elkins, Gulf Production 4, 5.
Brown, John Hoosier 5.
Davis, Peyton et al 1, 2.
Allison, Simms Oil 6.
Gordon, Simms Oil 2.
Brown, Sun Oil Co. 9.
Williams, Richardson & McAllister 1.
Edgar, Lester & Schaufer 1.
Roberts, Patrick et al 1.
Pillin, Ashley Brothers 1.
Greer, Powell Petroleum 1.
Chapman, McMan Oil & Gas 8.
Keener, Pure Oil 1.
Irvine, Cranfill & Reynolds 1.
McKie, Pure Oil Co. 65.
Kent, Pure Oil Co. 12.
Kent, Texas-Magnolia 30.
Ramsey, U. S. Tex Oil 4.
McCormick, Bankers Trust 1.
Williamson, Anderson Petroleum 2.
Harvard, Bridwell & Gray 4.
Holmes, Larue & Smith.
Goldman, Neeny & Smith 1.
Rigs, 9; wells drilling, 31; total, 40.

LIMESTONE COUNTY
Wells Drilling and Shut Down
(Shut Down Wells Indicated by *)
Cook, Mexia Giant Oil 1*.
Speight, Gardner et al 1.
Webster, Pure Oil Co. 1.
Wells drilling, 3.

FREESTONE COUNTY
Rigs
McClelland, McDonald Bros. 1.
Crouch, Humble Oil & Refining 1.
Crouch, J. K. Hughes et al 1.
Bounds, J. K. Hughes et al 1.
Bounds, Kirby Petroleum 1.
Beall, E. L. Smith et al 1.
Jackson, Farrish, Watson & Collins 1.
Townsite, Farish, Watson & Collins 1.
Chancellor, Kirby Pet. 1.
Edwards, E. L. Smith et al 1
Monning, Carter & Lytell 2.
Monning, Boyd Oil 1, 2.
Lendley, Humble O. & R. 1-A.
Mrs. Monning, J. K. D. Shaffer 1.
Wells Drilling
Pickens, Kechi Petroleum 1.
Bounds, Patterson Lake Oil 1.
Stubbs, Jolly Hoosier 1.
McCorkle Penn et al 1.
Monning, Carter & Lytell 1.
Rigs, 14; wells drilling, 5; total 19.

MISCELLANEOUS
Anderson County—
Rigs
Turner, Hughes et al 1.
Cass County—
Speers, Bankers Trust Co. 1.
Caster, Gibbs Petroleum 1.
Hopkins County—
Davis, Gulf Production Co. 1.
Hunt County—
Barnett, Tullal & Kelsey 1.
Van Zandt County—
Greer, Marland Oil Co. 1.
Wells Drilling and Shut Down
(Shut Down Wells Indicated by *)
Anderson County—
Parker, J. E. Williams et al 1*.
Brooks & Auldt, Rosser et al 1*.
Morning Plant, Palestine Oil & Gas 1*.
Bowie County—
Parker, Dalby Springs Oil 1*.
Rochelle, Delaney Oil Co. 1*.
LeForte, Mook Oil & Gas 2*.
Taylor, Tristate Oil 1*.
Cass County—
Evans, Caldwell et al 1*.
Cherokee County—
Clapp, Collington Drilling Co. 1.
Delta County—
Patrick, J. E. McNeill 1*.
Franklin County—
Harper, J. E. McNeill 1*.
Falls County—
DeGraffenreid, Myrin et al 1.
Penny, Edwin Falsey 1*.
Preston, C. W. Harrison et al 1*.
Peacock, High Banks Oil 1*.
Henderson County—
Bounds, F. Haynes 1*.
Eade, Richardson Brothers 1*.
Hopkins County—
Enix, The Texas Co. 1*.
Brooks, Kelley et al 1*.
Kaufman County—
Kirby, Germany et al 1*.
Barrow, Skinner & Lyles 1*.
Leon County—
Carrington, Mexia Marquest Oil 1*.
Milam County—
Smith, Sinclair Oil & Gas 1.
Letters, E. C. Nelson 1*.
Ashley, Beverly Oil 1*.
Buer, Beverly Oil 1.
Bremond, Mills Bennett 1*.
Hollinson, Garland Fallis 1.
Raines County—
Dowell, McLaughlin & Llyes 1*.
Red River County—
Dinviddie, Brewer Rines 1*.
Simmons, Clarksville Texas Co. 1*.
Arnold, Isabelle Givens 1, 1*.
Antone, Johnson Petroleum 1*.
Wortham, O'Bannon Brothers 1*.
Garland, Higgins Oil & Gas 1*.
Robertson County—
Wilkerson, J. C. Bland et al 1*.
Titus County—
Antone, Magnolia Pet. 1.
Van Zandt County—
Jones, Mexia Drilling Co. 1*.
Dunbar, Terrell Oil 1*.
Wood County—
Senter, The Texas Co. 1*.
Rigs, 6; wells drilling, 40; total, 46.

NORTH CENTRAL TEXAS

Summary of Wells Completed

District—	Comp.	Prod.	Dry	Gas
Wichita	36	1,215	12	0
Eastland	6	200	3	0
Stephens	12	1,095	7	1
Young	7	5	6	0
Archer	109	14,229	41	0
Wildcats	34	5,840	13	8
Total November	205	22,584	82	9
Total October	216	13,790	85	6
Difference	11	8,794	3	3

Summary of New Work

District—	Rigs	Drg.	Ttl.
Wichita	6	33	39
Eastland	5	17	22
Stephens	9	43	52
Young	4	19	23
Archer	11	79	90
Wildcats	25	124	149
Total November	60	315	375
Total October	67	270	337
Difference	7	45	38

WICHITA COUNTY
Wells Completed
Blagg, Jackson and others 1..... dry
Roller, Underwood Drilling Co. 1..... dry
Roberts, Wilcox et al 1..... dry
Burnett, Gulf Prod. Co. 26..... 120
Kemp, Humble O. & R. Co. 1..... dry
Pere Waggoner, Magnolia Pet. Co. 3... 10
Burnett, Section Two Oil Co. 4..... 110
Burnett, Texhoma O. & R. Co. 10-B... 50
Maer, Underwood Dig. Co. 7..... dry
McCarty, United Central O. Corp. 13.... 100
Fisher, Beggs Oil Co. 8..... 10
Douglas, Drillers Dev. Co. 4..... 10
Douglas, Magnolia Pet. Co. 10..... 25
Rio Bravo, Magnolia Pet. Co. 39..... 125
Maer, Petroleum Prod. Co. 10..... 110
Burnett, Stacy et al 2..... dry
Burnett, Texhoma O. & R. Co. 4-A.... 35
Jennings, Tom Cat Oil Co. 4-G..... 5
Maer, Underwood Dig. Co. 8..... 85
Maer, Underwood Dig. Co. 9..... 25
Overby, Hill et al 10..... dry
Kemp, O'Donohoe et al 2..... 85
Maer, Petroleum Prod. Co. 11..... dry
Waggoner, Shaw et al 1..... dry
Evans, Miller et al 1 30
Reilly, Magnolia Pet. Co. 106..... 50
Reilly, Magnolia Pet. Co. 107..... dry
O'Donohoe, White et al 2..... dry
Douglas, Camp O. & G. Co. 12-E..... 40
Burnett, Gordon O. Co. 1..... dry
Burnett, Texhoma O. & R. Co. 4-A.... 55
Burnett, Texhoma O. & R. Co. 6..... 140
Coleman, Tolbert et al 15..... 10
Coleman, Tolbert et al 16..... 10
Coleman, Tolbert et al 17..... 15

Wells completed 36
Production 1215
Gas 0
Dry 12

ARCHER COUNTY
Wells Completed
Wilson, Barkley & Meadows 4..... 35
Wilson, Bridwell & Heydrick 4..... 95
Jackson, Cannon et al 1..... dry
Wilson, Carter et al 1..... dry
White, Carter et al 6..... 190
White, Carter et al 7..... 500
White, Dee Brothers 1..... 250
Wilson, Dixson et al 1..... dry
Wilson, Empire G. & F. Co. 18-C..... 25
Parrish, Kentucky O. Corp. 5-C..... 100
White, Lane et al 1..... 240
Sterrett, McDonald et al 1..... dry
Wilson, Murchison et al 2..... 45
Murrah, Petroleum Prod. Co. 1..... dry
Nichols, Featherstone et al 8..... 20
Farrish, Sun Oil Co. 2..... 110
Wilson, Staley et al 8-C..... 140
Lowry, Sun Oil Co. 1..... dry
Anderson, Archer Duke Oil Co. 1..... dry
Neal, Burns et al 1..... dry
Logan, Carey Dig. Co. 1..... dry
Jenkins, Clark et al 1..... dry
Scruggs, Clark et al 6.. 25
Beardon, Consolidated O. Co. 2..... 125
Ragle, Consolidated O. Co. 4-B..... 150
Ragle, Consolidated Oil Co. 3-C..... 85
Parkey, Daniels et al 1..... dry
Hayter, Flowers et al 1..... dry
Davis, Grisham et al 1..... 380
Griffin, Maer et al 1..... 485
Llewellyn, Magnolia Pet. Co. 5..... 90
Llewellyn, McGregor et al 2..... 110
Campbell, Shamrock et al 6..... 150
Goldsmith, Shamrock et al 14..... 100
Green, Sun Oil Co. 1..... 250
Neal, Swastika Oil Co. 1-B..... 300
Farmer, Archer Oil Corp. 1..... 65
Llewellyn, Magnolia Pet. Co. 5..... 90
Llewellyn, McGregor et al 2..... 110
Richardson, Swastika Oil Co. 1..... 10
Benson, Polk et al 1..... dry
Bridwell, Carey Drilling Co. 1..... 200
Bearden, Consolidated Oil Co. 3..... 500
Farmer, Evangeline Oil Co. 1..... 10
Bridwell, Maer et al 1..... dry
Goldsmith, Melat et al 2..... 75
Farmer, Featherstone et al 2..... dry
Benson, Russell et al 3..... dry
Logan, Saunders et al 1..... 220
Falls Co. School Land, Simms O. Co. 1 dry
Cowan, Superior Oil Co. 1..... dry
Goldsmith, The Texas Co. 1..... dry
Jeske, Texhoma O. & R. Co. 1..... 65
Wilson, Texhoma O. & R. Co. 1..... dry
White, Dee Brothers 2..... dry
White, Carter et al 8-E..... 120
Farrish, Carter et al 1..... dry
White, Humphries et al 6..... 85
Wilson, Jeffers et al 1..... dry
White, Lane et al 2..... dry
Wilson, Murchison et al 3..... 110
Miller, Norwood et al 1..... dry
Brown, Oil Investment Co. 1..... dry
White, Robertson et al 4..... dry
Bridwell, Carey Drilling Co. 1..... 515
Ragle, Consolidated O. Co. 8-D..... 215
Lester, Daniels et al 1..... dry
Cowan, Hart Oil Corp. 1..... dry
Wilson, Haines et al 2..... dry
Griffin, Murchison et al 1..... dry
Llewellyn, Panhandle O. & R. Co. 2... dry
Anderson, Shamrock Oil Co. 1..... dry
Boren, Shamrock Oil Co. 1..... dry
Richardson, Shamrock Oil Co. 12-B.... 115
Goldsmith, Shamrock Oil Co. 15..... dry
Goldsmith, Shamrock Oil Co. 16..... dry
Jeske, The Texas Co. 1..... 700
Hausler, Texhoma O. & R. Co. 2..... 960
K. & K., Staley et al 1..... dry
White, Carter et al 2-C..... 35
White, Carter et al 9-E..... 170
White, Dee Brothers 1-B..... 25
White, Jetter et al 1..... 265
White, Robertson et al 9..... 135
White, Woodburn O. Corp. 13-A..... 55
Logan, Saunders et al 2..... 60
Echols, Clark et al 3..... 85
Echols, Mlark et al 3..... 85
Davis, Consolidated Oil Co. 3-A..... 200
Davis, Consolidated Oil Co. 1-B..... 275
Ragle, Consolidated Oil Co. 5-B..... 50
Ragle, Consolidated Oil Co. 5-D..... 400
Ragle, White Oil Co. 1-E..... 350
Vernon, Featherstone et al 1..... dry
Davis, Grisham et al 2..... 450
Bearden, Jones et al 1..... dry
Hausler, Krog et al 1..... dry
Harbison, Lowery et al 4..... 225
Cowan, Major Pet. Co. 4..... dry
Goldsmith, Melat et al 2..... 100
Goldsmith, Melat et al 3..... 90
Griffin, Murchison et al 1..... 265
Rogers, Producers Pet. Co. 1..... 220
Andrews, Ramming et al 1..... dry
Green, Sun Oil Co. 2..... 450
Richardson, Swastika Oil Co. 3..... 110
Hausley, Texhoma O. & R. Co. 2..... 960
Rogers, Underwood Dlg. Co. 1..... 350
Herron, World Pub. Co. 1..... dry

Wells completed 109
Dry 41
Production 14229
Gas 0

YOUNG COUNTY
Wells Completed
Casey, Grant et al 1..... dry
Benson, Winnepeg Oil Co. 1..... dry
Graham, Bashara et al 1..... dry
Logan, Brown et al 1..... dry
Driver, Cheney et al 5..... 5
Hamilton, Knight & Hines 1..... dry
Neely, Knight & Hines 1..... dry

Wells completed 7
Dry 6
Production 5
Gas 0

STEPHENS COUNTY
Wells Completed
Hill, Mid-Kansas O. & G. Co. 13..... 275
Hill, Mid-Kansas O. & G. 14..... 370
Hill, Mid-Kansas O. & G. Co. 5..... 260
Walker, Buckeye Dev. Co. 8..... dry
Couger, Texiken O. Co. 1..... 40
Hand, Acct. 2, Texas Pac. C. & O. Co. 1 dry
Sandidge, Welch et al 2..... dry
Cobb, Critten et al 7..... 150
Cobb, Critten et al 8..... dry
Brown, Liner et al 2..... dry
Walker & Caldwell, Raney Buckeye Dev. Co. 2..... dry
Robertson, McLester et al 1..... dry
Hall, States O. Corp. 1..... gas

Wells completed 13
Production 1095
Gas 1
Dry 7
Gas 6,000,000

EASTLAND COUNTY
Wells Completed
Fox, Hamilton et al 1..... dry
Storm, McMeans et al 1-A..... dry
Harris, Magnolia Pet. Co. 5..... 100
Davenport, Hart et al 1..... 75
Westmoreland, Hart et al 1..... 75
Westmoreland, Magnolia Pet. Co. 17.. 55
McDonald, Grisham et al 1..... dry

Wells completed 6
Production 200
Dry 3
Gas 0

WILDCATS
Carson County—
Burnett, Silk and others 3..... dry
Burnett, American Ref. Co. 2..... 250
M. C. Burnett, The Texas Co. 1..... gas
Wilbarger County—
Rogers, Magnolia Pet. Co. 15..... 10
Stephens, South Vernon Oil Co. 1.....1800
Fee, Magnolia Pet. Co. 65..... 10
Dill, Bridwell et al 1..... 450
Stephens, Bridwell et al 1.....1390
Stephens, Bridwell et al 2..... gas
Clay County—
Panhandle, Lone Star Gas Co. 5..... gas
Withers, Lone Star Gas Co. 4..... gas
Harding, Burton et al 1..... dry
Lochridge, Lone Star Gas Co. 5..... gas
Ross, John O'Neill et al 1..... dry
Throckmorton County—
Steele, Young Bros. 1..... dry
Shackelford County—
Sedwick, Kellogg Dig. Co. 1..... 15
Callahan County—
Allen Shackelford et al 1..... dry
Hennessey, Byron Union Oil Co. 1..... dry
Carter, Dillon et al 1..... 25
Cathey, Dillon et al 6..... 40
Mitchell County—
Morrison, California Co. 11..... 60
Montague County—
Howard, Texhoma O. & R. Co. 1..... 65
Sterling County—
McIntyre, Concho Dig. Co. 1..... dry
Reagan County—
Mackintosh, Mid-Kansas O. & G. Co. 1 dry
University, Big Lake O. Co. 12.....3700
Childress County—
Smith, Noco Mexican Synd. 1..... dry

Gray County—
Saunders, The Texas Co., 1 ..... gas
Foard County—
Halsell, Landreth O. Co. 1 ..... dry
Concho County—
Waring, Signal Oil Co. 1 ..... dry
Palo Pinto County—
Strawn Coal Co., Britton et al 2 ..... gas
Brown County—
Newton, Davis et al 1 ..... dry
Chambers, O'Donnell et al 2 ..... dry
Cox, Avery et al 3 15
Newton, Mendenhall et al 2 10

Wells completed 34
Production 5840
Dry 13
Gas 7

WICHITA COUNTY

Rigs

Reilly, Magnolia Pet. Co. 109.
Roller, Page et al 1.
Waggoner, Eureka Prod. Co. 11.
Watkins, Hawkins et al 1.
Pere Waggoner, Magnolia Pet. Co. 4.
Ancell, Salmon et al 1.

Wells Drilling

Rathgaber, Clopton et al 1.
Bordfeldt, Donovan et al 1.
Bailey, Hunter et al 4.
Reilly, Magnolia Pet. Co. 108.
Staley-Beach, Magnolia Pet. Co. 41.
Chilson, Stump Oil Co. 1.
Fisher, Barr et al 1.
Throckmorton, Cook et al 1.
Jennings, Elliott et al 2.
Fisher, Granite Oil Co. 7.
McCarty, Hammond et al 1.
Waggoner, Hammond et al 1.
Fisher, Hampton et al 1.
Ferguson, Herbert et al 1.
Allen & Kemp, Kruger et al 1.
Kemp, Leath et al 1.
Abernathy, Magnolia Pet. Co. 1.
Douglas, Magnolia Pet. Co. 11.
Henaker, Magnolia Pet. Co. 65.
Waggoner Bros., Magnolia Pet. Co. 8.
Rio Bravo, Magnolia Pet. 39, 40.
Waggoner, Magnolia Pet. Co. 8-A, 4-B.
Roller, Min-Tex O. Co. 7.
Allen & Kemp, Donohoe et al 3.
McClure, Rubson et al 3.
K. & K., The Texas Co. 1.
Waggoner, The Texas Co. 296.
Burnett, Texhoma O. & R. Co., 5-A, 1-B, 11-B, 3-C.
Rigs, 6; wells drilling, 33; total, 39.

ARCHER COUNTY

Rigs

Nelson, Verschoyle et al 8-B.
Logan, Saunders et al 3.
Echols, Clark et al 4.
Martin, Harris et al 1.
Hausler, Humble O. & R. Co. 1.
White, Carter et al 1-F.
Griffin, Maer et al 7.
Prideaux, Nicholson et al 1.
Hausler, Texhoma O. & R. Co. 1.
Jeske, Texhoma O. & R. Co. 2.
Rogers, Underwood Dig. Co. 2.

Wells Drilling

Ferguson, A. B. C. Oil Co. 3.
Kemp & Kempner, Long et al 1.
Wilson, Humble O. & R. Co. 1.
Pease, Humble O. & R. Co. 2.
White, Humphreys et al 10.
White, Jetter et al 2.
Hughes, Anderson et al 2.
White, Lane et al 3.
Oil Investment Co., Lincoln et al 1.
Parrish, Atlantic Oil Co. 5.
Parrish, Magnolia Pet. Co. 6, 7.
Wilson, Barkley et al 6.
Wilson, McCarty et al 5.
Wilson, Riner et al 13-B.
White, Robertson et al 3, 10.
Parrish, Simms Oil Co. 2.
Wilson, Texhoma O. & R. Co. 3-C.
Wilson, Woodburn O. Corp. 11-A, 12-A.
Farmer, Archer Oil Co. 1.
Parrish, Clopton et al 1.
Farmer, Gwynn et al 1.
Robertson, Magnolia Pet. Co. 1.
Taber, Mitchim and others 1.
Farmer, Simms Oil Co. 1.
Farmer, Tucker et al 1.
Campbell, Barbee et al 1.
Norred, Bridwell et al 1.
Bridwell, Carey et al 2.
White, Carter Oil Co. 12-B.
Cowan, Cline and others 1.
White, Carter Oil Co. 11-E.
Bearden, Consolidated Oil Co. 4, 5.
Ragle, Consolidated Oil Co. 6-B, 2-E, 3-E.
Kunkel, Davis and others 1.
Cox, Eagle Creek Oil Co. 1.
Rogers, Green and others 1.
Rogers, Gwynn and others 1, 2.
Davis, Gwynn and other 3.
Young, Goldsmith and others 1.
Hausley, Hardesty and others 1.
Stamphil, Harris and others 1.
Kunkel, Harvey and others 1.
Russell, Hobbs and others 1.
Connor, Jewell and others 1.
Bridwell, Maer and others 2.
Griffin, Maer and others 2, 3, 4, 5, 6.
Neal, Maer and others 1.
Goldsmith, Melat and others 4, 5.
Harmel, Murchison and others 1-B, 1-C, 2-C.
Griffin, Murchison and others 2, 3.
Wood, Murchison and others 1.
Harmel, Mutual Oil Co. 1.
Bridwell, Petroleum Products Co. 1.
Rogers, Petroleum Products Co. 2.
Hausler, Featherstone and others 1, 2.
Andrews, Ramming and others 1-B.
Campbell, Shamrock Oil Co. 7.
Richardson, Shamrock Oil Co. 13.
Goldsmith, Shamrock Oil Co. 15.
Kinder, Southern Exploration Co. 1.
Jeske, The Texas Co. 2.
Hausler, Texhoma Oil & Ref Co. 3, 4.
Bearden, Lee Wilson and others 4, 6.
Campbell, Young and others 1.
Rigs, 11; wells drilling, 79; total 90.

YOUNG COUNTY

Rigs

Keith, Daniels and others 1.
Craig, Dyer and others 1.
Jeffrey, Knight & Hines 1.
Campbell, Reed and others 1.

Wells Drilling

Zimmerman, Applegate and others 1.
Lewis, Burton and others 1.
Alexander, Burns and others 1.
Harrison, Cheney and others 1.
Johnson, Dunn and others 1.
Hill, Harvey and others 1.
Johnson, Herbert and others 1.
Marshall, Keener Oil & Gas Co. 1.
Campbell, Litchfield and others 1.
Johnson, McGarr and others 1.
Scarborough, McGarr and others 1.
Cheney, Monroe Drilling Co. 1.
Hume, Miller and others 1.
Williams, Nash and others 1-B.
Foster, Reed and others 1.
Willis, Simms Oil Co. 1.
Stoval, Stoval and others 1.
Keithley, Union Oil Co. 1.
Dawes, Vance and others 1.
Rigs, 4; wells drilling, 19; total, 23.

STEPHENS COUNTY

Rigs

Lane, Interstate Oil Co. 1.
Hill, Mid-Kansas Oil & Gas Co., 3 Acct. 2.
Lane, Mid-Kansas Oil & Gas Co., 3 Acct. 2, 5 Acct. 2.
First Natl Bank, Walker and others 3.
Jennings, Carter and others 1.
Brown, Lewis Oil Co. 1.
Bradford, Landreth and others 2.
Cobb, Crittendon and others 1.

Wells Drilling

Webb, Hoffer Oil Corp. 1.
Martin, Ivan Petroleum Co. 2.
Lee, Mid-Kansas Oil & Gas Co. 3.
Williams, Mid-Kansas Oil & Gas Co. 2 Acct. 2.
Keel, Pender Production Co. 2.
Crudington, Pierce Oil Corp. 1.
Adkins, Prairie Oil & Gas Co. 15.
Caldwell, Prairie Oil & Gas Co. 2.
Knox, Republic Production Co. 2.
Ackers, Snowden & McSweeney 8.
Higginbotham, Snowden & McSweeney 5.
Echols, Swensondale Oil Co. 1.
Martin, Texas Consolidated Oil Co. 6.
Rogers, Texas Pacific Coal & Oil Co. 5.
First Natl. Bank, Walker and others 4, 5.
Jennings, Carter and others 1.
Texas & Pacific, Carter and others 1.
Humphreys, Christie Brothers 4.
Simmons, Cobb and others 1.
Satterfield, Crosby Oil & Gas Co. 1.
McClesskey, States Oil Corp. 1.
O'Laughlin, Humble Oil & Refining Co. 1.
Grimes, Kleinfielder and others 1.
Flournoy, Knox-Lewis Oil Co. 1.
Ward, Landreth Petroleum Co. 2, 7, 8.
McCawley, Magnolia Petroleum Co. 5.
Taylor, Magnolia Petroleum Co. 1.
Head, Mook Texas Oil Co. 2.
Hart, Pender Production Co. 1.
Watson, Campbell and others 1.
Curry, Scott and others 1.
Sorgee, Sendorf Brothers 2.
Boles, States Oil Copr. 1.
Stoker, Sun Oil Co. 6.
Curry, The Texas Co. 10.
McClure, Texas Fidelity Oil Co. 1.
Veal, Texas Pacific Coal & Oil Co. 1.
Winsloe, Texas Pacific Coal & Oil Co. 2-B.
Adams, Trippiehorn Prod. Co. 1.
Rigs, 9; wells drilling, 43; total, 52.

EASTLAND COUNTY

Rigs

Miller, Eby and others 6.
White, Knox & Lewis 1.
Rogers, Magnolia Petroleum Co. 4.
Bucy, Kimmell and others 1.
Hatton, Weaver Oil Corp. 1.

Wells Drilling

Dawson, Adams and others 2.
Pettit, Adams and others 1.
Armstrong, Beard and others 1.
Brashear, Dixie Oil Co. 1.
Shugart, Kirk & Brewer 5.
Halcomb, Lobaugh and others 2.
Scott, Parsons and others 1.
Quiett, States Oil Corp. 8.
Scott, Teatsort and others 1.
Jordan, Eastland Oil Co. 1.
Gooch, Keough Brothers 10.
Owens, Ladd and others 1.
White, McBride and others 1.
Storm, McMeans and others 1.
McClelland, Riley and others 1.
Ammerman, Root and others 1.
Hart, Root and others 1.
Rigs, 5; wells drilling, 17; total, 22.

WILDCATS

Hutchinson County—

Wells Drilling

Johnson, Barnum and others 1.
Smith, Dixon Creek Oil Co. 1.
Whittenburg, Douglas Oil Co. 1.
Bivens, Amarillo Oil Co. 1-B.
Shaw, Prairie Oil & Gas Co. 1.
Kingsland, Twin Six Oil Co. 1.
Johnson, Tex-O-Oil Co., 1.
Smith, Western Enterprise Oil & Gas Co. 1.
Whittenburg, Wilson and others 1.

Moore County—

Wells Drilling

Masterson, Amarillo Oil Co. 1-A.

Potter County—

Wells Drilling

Warick, Amarillo Oil Co. 1.
Bush, Amarillo Oil Co. 1.

Rigs

Carson County—
Burnett, The Texas Co. 5.

Wells Drilling

Burnett, American Refining Co. 3.
Burnett, Crosby Oil Co. 1.
Burnett, Gates Oil Co. 1.
Burnett, Marland Oil Co. 1.
Burnett, Olsen Brothers 1.
Burnett, Silk and others 3-A.
Burnett, Skelly Oil Co. 2.
Burnett, The Texas Co. 4.

Gray County—

Wells Drilling

Bradford, Anderson and others 1.
Combs & Worley, Clark and others 1.
Henry, Dilliard and others 1.
Morse, Holmes and others 1-A.
Worley & Reynolds, Wilcox Oil Co. 1.
Wilson, Wilcox Oil Co. 1.

Wheeler County—

Wells Drilling

Westmoreland, Shedden and others 1.
Williams & Laycock, Whitting and others 2.

Wilbarger County—

Rigs

Stephens, Barkley and others 1.
Waggoner, Bridwell and others 1.
Castleberry, Humble Oil & Refining Co. 1.
Waggoner, Mulligan and others 1.
Zipperle, Mutual Oil Co. 1.
Bond, Ray and others 2.
Streit, Skinner and others 1.

Wells Drilling

Stephens, Bridwell and others 3, 4.
Dill, Dill and others 1.
Kester, Hamilton and others 1.
Smith, Hart and others, 1.
Waggoner, Kolp and others 1.
Richardson, McCamey and others 1.
Waggoner, Noble Oil Co. 1.
Bowers, Oklahoma Texas Refining Co. 1.
Dill, Petroleum Producers Co. 2.
Zipperle, Prince Brothers 1.
Bond, Ray and others 1.
Dill, Ray and others 1.
Stephens, South Vernon Oil Co. 1, 4, 5.
Waggoner, Staley and others 1.
Sheldon, Tippit and others 1.
Bond, Waggoner and others 1.
Bond, Winnipeg Oil Co. 1, 2, 3.
Waggoner, Wells and others 1, 2.

Baylor County—

Wells Drilling

Hawkins, Crittendon and others 1.
Shawver, Dallas Oil Co. 1.
Shawver, Glazier and others 1.
Portwood, Magnolia Petroleum Co. 2.
Fancher, Moore and others 1.

Clay County—

Wells Drilling

Culver, Evans and others 1.
Scott & Ramadell, Finley Development Co. 4
Scott & Ramadell, Sullivan and others 2.
Parker, Somers and others 1.
Boddy, Sheldong Oil Co. 1.

Montague County—

Wells Drilling

Jordon, Guarantee Fund Oil Co. 1.
Howard, Petroleum Producers Co. 1.
Cato, Texhoma Oil & Refining Co. 1.
Gist, The Texas Co. 2-A.

Cooke County—

Wells Drilling

Davis, Big Indian Oil & Development Co. 1.

Collin County—

Rigs

Walton, Kyle and others 1.

Denton County—

Wells Drilling

Dollenger, Golloday and others 1.

Throckmorton County—

Rigs

McCarsen, Clark and others 1.
Smythe, The Texas Co. 1.

Wells Drilling

Odell, Hamilton and others 1.
Broyles, King and others 1.
Conger, Larkin and others 1.
Richards, Larkin and others 1.
McKnight, Shamrock Oil Co. 1.
Parrot, Whatley and others 1.

Stonewall County—

Wells Drilling

Ward, Nance and others 1.

Garza County—

Wells Drilling

Boren, Blackwell and others 1.

Shackelford County—

Rigs

Poindexter, Landreth Pool Co., 13, 15.

Wells Drilling

Green, Humble Oil & Refining Co. 1.
George, Magnolia Petroleum Co. 4.
Lynch, McMahon and others 2.

Palo Pinto County—

Wells Drilling

Belding, Hughes and others 1.
Weldon, Hughes and others 2.
Stringer, Phillips and others 1.
Slemmons, Pender Production Co. 2.

Johnson County—

Wells Drilling

Pullen, Culberson and others 1.

Somerville County—

Wells Drilling

Buzon, Glenrose Oil & Gas Co. 1.

Callahan County—

Rigs

Cathey, Dutton and others 5, 7.
Finley, Hickey and others 2.

Wells Drilling

Hennessey, Byron Union Oil Co. 1.
Moore, Dudley Oil & Gas Co. 1.
Bryson, Pope and others 4.
Crane, George T. Prewitt and others 1, 2.
Crane, W. W. Prewitt and others 1.
White, W. W. Prewitt and others 1.

Taylor County—

Wells Drilling

Hollingshead, Sanger Oil & Ref. Co. 1.

Mitchell County—

Rigs

Kynerd, Daniel and others 1.
Miller, Sloan and others 3.

Wells Drilling

Gist, Eddleman and others 1.
Coleman, Humphreys and others 1.
Clark, California Co. 1.
Miller, California Co. 5.
Abrams, California Co. 7.
Kynerd, Morrison and others 1.

Sterling County—

Wells Drilling

Douthit, Cooperative Lease and Dev. Co. 1.
Durham, Chicago Texas Oil & Gas Co. 2.
Hull, Fidelity Oil Co. 1.
Foster, Foard and others 1.

Brown County—

Wells Drilling

Wheeler, Anderson and others 1.
Cox, Gulley and others 1.
DeBusk, Honea and others 2.
Williams, Moore and others 1.
Prather, New Era Oil Syndicate 3.
Chambers, Slick and others 1.
Gunn, Stone and others 1.

Comanche County—

Rigs

Goss, Mon-Tex Oil Co. 1.

Wells Drilling

Sturki, Cox and others 1.
McKeehan, Fain and others 1.

Irion County—

Rigs

Noelke, Virginia Tex. Pet. Co. 1.

Wells Drilling

Suggs, Orient Oil Co. 1.

Reagan County—

Rigs

University, Brandon and others 1.
University, Cogdell and others 1.
University, Hoffman and others 1.
University, Hughes Development Co. 1.
University, Grayson and others 1.
Hughes & Mason, Mid-Kansas O. & G. Co. 1.

Wells Drilling

University, Arkansas Fuel Oil Co. 1.
University, Big Lake Oil Co. 13, 14, 15.
University, California Co. 1.
University, Crockett Drilling Syndicate 1.
University, Texon Oil & Land Co., 1 Group 2, 2 Group 1, 3 Group 1.
University, Transcontinental Oil Co. 1.
University, University Oil Co. 1.
Rigs, 25; wells drilling, 124; total, 149.

GULF COAST

Summary of Field Operations

Districts—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Batson	8	60	3	1	2	4	6
Blue Ridge ..	1	250	0	0	0	2	2
Barber Hill ..	1	0	1	0	1	0	1
Big Creek	1	50	0	0	1	4	5
Damon Mound	1	0	1	0	0	1	1
Edgerly (La.)	1	50	0	0	0	1	1
Goose Creek .	8	265	3	0	3	14	17
Hull	9	*4,650	2	0	5	8	13
Humble	3	500	1	0	3	5	8
Jennings (La.)	2	*1,850	0	0	0	1	1
Markham	2	0	2	0	0	1	1
Orange	10	*10,370	2	0	11	18	29
Pierce Jct. ..	2	600	0	0	0	2	2
Spindletop ...	3	150	2	0	0	2	2
Saratoga	3	125	0	0	5	3	8
Sour Lake	5	115	2	0	4	3	7
Vinton (La.)	3	0	2	1	0	11	11
West Columbia	0	0	0	0	1	2	3
Lockport (La.)	0	0	0	0	0	3	3
Miscellaneous (Gulf Coast)	9		8	7	1	13	24	37
Total Nov..	72	18,843	29	3	44	109	153
Total Oct...	68	13,792	18	1	26	93	119
Difference..	4	5,051	11	2	18	16	34
Southwest Fields—							
Luling	6	1,450	1	0	3	11	14
Laredo districts	5	200	0	2	4	10	14
Somerset	2	16	0	0	0	5	5
Callihan	0	0	0	0	2	4	6
Rockdale-Minerva ...	0	0	0	0	4	5	9
Jim Hogg County	0	0	0	0	5	8	13
Miscellaneous.	9	0	9	0	†26	†42	†68
Total Nov..	22	1,666	10	2	44	86	129
Total Oct...	29	5,265	5	2	96	383	479
Difference..	7	3,599	5	0	52	298	350
Grand total for Nov. .	94	20,509	39	5	88	194	282
Grand total for Oct. .	97	19,057	23	3	122	476	598
Difference .	3	1,452	16	2	34	282	316

*Wells sanded.
†Large decreases due to elimination of old derricks and standing wells in West Texas counties from the report. Many of these have been idle for two years; others are now included in the monthly report of the North Central Texas division, thus being duplicated.

WELLS COMPLETED

BATSON

Texas, East Batson Oil 1 ..... dry
BBBC, Paraffine Oil 3 10
Hodges, Anderson & Munson 1 ..... sw
Paraffine, Acorn Oil 47 20
Milhome, S. R. Buchanan 78 15
Milhome, S. R. Buchanan 80 15
Donohoe, W. B. Flynn 2 ..... sw
Wise, Ada Belle Oil 31 ..... gas

Wells completed 8
Production 60
Salt water and abandoned 3
Gas 1

BARBER HILL

River Rice Co., S. J. Hindman 1 ..... abd

BLUE RIDGE

Robinson, The Texas Co. 12 (D.D.) 250

BIG CREEK

Davis, Gulf Production Snowden & McSweeney 9 (D.D.) 50

DAMON MOUND

Bryan, Hamm & Co. 1 (D.D.) ..... dry

EDGERLY (La.)

Lilliard, G. W. Gray 13 (W.O.) 50

GOOSE CREEK

Tabb, Humble Oil & Ref. 1 (W.O.) ..... sw
Paddock, Gulf Production 12 (W.O.) 40
Smith, Gulf Prod. 24 (W.O.) 50
Wright, F. B. West 5 25
Wright, Southern Exploration 8 75
Gillette, Allen & Marshall 1 ..... abd
Bryan, Howard Oil 4 (W.O.) ..... sw
Bartlett-Smith, Sun Oil Co. 2 (W.O.) 75

Wells completed 8
Production 265
Abandoned and salt water 3

HUMBLE

Burt 50 A., Czereaux and Martin 1 400
Invincible, J. Martin 29 100
Lee, Hardin and others 1 ..... abd

Wells completed 3
Production 500
Abandoned 1

HULL

Hannah, Humble Oil & Refining 1 ..... abd
Hooks-Spells, Humble Oil & Ref. 10 75
Barngrover, Houston Production 12 25
Thomas fee, Gulf Production 6 (D.D.) abd
Scarborough, Gulf Production 7 (D.D.) abd
Morris-Phillips, Gulf Prod. 3 (W.O.) 200
Dolbear, Republic-Houston Oil 91 500
Dolbear, Republic-Houston Oil 94 850
*Mecom, Mecom Oil 6 3000

Wells completed 9
Production 4650
Abandoned 3
*Sanded after 2 days.

JENNINGS

S. F. S., Green & Sutton 1 150
Arandalt, Gulf Refining Co. 1 (D.D.) 1500

Wells completed 2
Production 1650

MARKHAM

Hudson, Rycade Petroleum 3 ..... abd
Sisk, Rycade Petroleum 1 ..... abd

Wells completed and abandoned 2

ORANGE

Chesson, Mutual Oil (D.D.) 3500
Chesson, Mutual Oil 3 (D.D.) 4300
Winifree, American National Oil 1 ..... sw
Brown, Brownie Babbittee Oil 4 25
Brown, Brownie Babbittee Oil 3 ..... abd
McLean, Brownie Babbittee Oil 5 (W.O.) 160
Winifree, Humble Oil & Ref. 7 (D.D.) .. 1000
Winifree, Orange Petroleum 8 65

Chesson, Humble Oil & Ref. 8-B (D.D.).1,200
Jackson, Supreme Oil 3 (W.O.) 120

Wells completed 10
Production 10370
Abandoned and salt water 2

PIERCE JUNCTION
Cain, Snowden & McSweeney 8 500
Taylor, Gulf Prod. 10 (D.D.) 100

Wells completed 2
Production 600

SPINDLETOP
Fort Worth, Wilson & Broach 11 150
Trembly, W. T. Wherry 1 ..... abd
Gladys, Rycade Petroleum 1 ..... abd

Wells completed 3
Production 150
Abandoned 2

SARATOGA
Texas, Weldon Oil 2 100
Hooks, Paggi Brothers Oil 2 (W.O.)... 10
Brice, Sun Oil Co. 159 15

Wells completed 3
Production 125

SOUR LAKE
Fee, Hamacker & Co. 1 35
Minor, Lake View Oil 4 ..... sw
Fee, The Texas Co. 237 (W.O.) 65
Hardin, Lake View Oil 40 ..... abd
Bass & Eastham, Sun Oil Co. 60 15

Wells completed 5
Production 115
Abandoned and salt water 2

VINTON (La.)
Star, Gulf Refining 23 ..... sw
Gray, The Texas Co. 26 ..... gas
Vincent, Vinton Petroleum 13 ..... sw

Wells completed 3
Salt water 2
Gas 1

MISCELLANEOUS
Galveston County—
High Island, Sun Oil Co. 1-C, 7 Cade.. abd
Liberty County—
Ott, The Texas Co. 1 ..... abd
Brazoria County—
Stratton Ridge, S. R. Oil Co. 13 Dannebaum ..... abd
Fort Bend County—
Nash, Rycade Petroleum 1 ..... abd
Moore, Gulf Production 1 ..... abd
Harris County
Schnieder, Dome Development 1 ..... abd
Jackson County—
Jackson County, Jackson County Syndicate 2 Drushell ..... gas
Anna Gelina County—
Ellison, Fred Henne 1 8
Fort Bend County—
Davis, Pathfinder Oil 4 ..... abd

Wells completed 9
Production 8
Gas 1
Abandoned 7

SOUTHWEST FIELDS
Luling—
Trammell, United North & South Oil 1 200
Branyon, United North & South Oil 6 150
Tiller, Beaver Oil 1 150
River Bed, Beaver Oil 1 250
Allen, United North & South 1 (W.O.) 700
Jones, Walhunda Oil 1 ..... abd

Wells completed 6
Production 1450
Abandoned 1
Laredo District—
——— Chenault & Allen 1 50
Wolcott, Magnolia Petroleum 13 75
Wolcott, Olsan Oil 5 75
Bruni, Cole Petroleum 5 ..... gas
Car-Tex., Morgan-Gibble Co. 2 ..... gas

Wells completed 5
Production 200
Gas 2
Gas production 80,000,000
Somerset—
Touchstone, Somerset Crude Oil 2 8
Brown, Howard & Hitcham 1 8

Wells completed 2
Production 16
Miscellaneous
Jim Wells County—
Simms Petroleum 1 ..... abd
Bexar County—
Lamm, T. B. Slick 1 ..... abd
Reeves County—
Findley, Bell-Reeves Co. 1 ..... abd
Hernsher, W. S. Troy 1 ..... abd
Wirt, El Paso-Sargossa Oil Co. 1..... abd
Johnson, Pico Petroleum 1 ..... abd
Pecos Valley, Texas Drilling 1 ..... abd
Cowan, Willoughby Petroleum 1 ..... abd
Casey, Rodenbaugh et al 1 ..... abd

Wells completed 9
Abandoned 9

BATSON
Rigs
Milhome, S. R. Buchanan 81.
King, Cavitt et al 2.
Wells Drilling
Texas, East Batson Oil 2.
Paraffine, Acorn Oil 48, 49.
Hodges, Anderson & Munson 2 (deepening).
Rigs, 2; wells drilling 4; total, 6.

BLUE RIDGE
Wells Drilling
Invincible, Gulf Production 1.
Luscher, Gulf Production 7.
Wells drilling, 2.

BARBER HILL
Rig
Collier, S. J. Hindman et al 1.

BIG CREEK
Rig
Moore, Rich & Co. 2.
Wells Drilling
Davis, Gulf Prod.-Snowden & McSweeney 16, 17.
Wheat, Gulf Prod.-Snowden & McSweeney 8.
Fee, The Texas Co. 1.
Rig, 1; wells drilling, 4; total, 5.

DAMON MOUND
Well Drilling
Bryan, Hamm & Co. 1. (Deepening.)

EDGERLY
Well Drilling
Moore, Green Oil 6. (Deepening.)

GOOSE CREEK
Rigs
Duke, Inca Production 2.
Wright, Southern Exploration 2. (W.O.)
Producers, Gulf Production 8. (W.O.)
Wells Drilling
Smith, Humble Oil Ref. 47, 59, 60, 56.
Jones, Humble Oil & Refining 5. (W.O.)
Hirsch, Gulf Production 4.
Wright, Gulf Production 6 (W.O.) 21-A.
Tabb, Gulf Production 8. (W.O.)
Smith, Gulf Production 15. (Deepening).
Chapman-Bryan, Gulf Production 3.
Gaillard, Gulf Coast-United Central 40.
Bryan, Copeland Oil 6.
Busch, Hisgen Production 2.
Rigs, 3; wells drilling 14; total, 17.

HUMBLE
Lee, Hardin & Co. 2.
River, Kane Production 1-2.
Wells Drilling
Conway, Weed & Co. 1.
Burt 100 acres, P. S. Griffith 1.
Koehler, Long, Barclay & Meadors 1.
Cherry, Marmiles Brothers 2.
Stevenson, The Texas Co. 42.
Rigs, 3; wells drilling, 5; total, 8.

HULL
Rigs
Dolbear, Republic Production 95, 96.
Hannah, Texas-Vacuum Co.'s joint No. 4.
Phoenix, Gulf Production 43. (W.O.)
Morris-Phillips, Gulf Production 8. (W.O.)
Wells Drilling
Dolbear, Republic-Houston Oil 90, 93.
Hannah, Humble Oil & Refining 1-B.
Guedry, Humble Oil & Refining 18.
Barngrover, Empire Gas & Fuel 16.
Scarborough, Gulf Production 13, 14.
Phoenix, Gulf Production 8. (W.O.)
Rigs, 5; wells drilling, 8; total, 13.

JENNINGS
Well Drilling
Fee, Coastal Fuel Oil 69. (W.O.) S.D.

ORANGE
Rigs
McLean, Brownie Babbittee Oil 1. (W.O.)
Chesson, Humble Oil & Ref. 9, 14-A, 21-B.
Chesson, Mutual Oil 6, 9 (W.O.), 14.
Carbello, Edgerly Pet. 3 (W.O.).
Hager Fee, Gulf Prod. 17.
Hager-Moore, Gulf Prod. 10.
Chesson, Gulf Prod. 4-A.
Wells Drilling
Winifree, Amn. Nat. Oil 1 (dpng.)
Brown, Brownie Babbittee Oil 4 (W.O.).
Cow Bayou, Rycade Pet. 1-E, 8, 14, 5-A.
Winifree, Humble Oil & Ref. 11.
Chesson, Mutual Oil 7. (W.O.)
Bellisle, Sun Oil Co. 2. (Deepening.)
Brown, Sun Oil Co. 4; 5 shut down.
Chesson, Orange Petroleum 8.
Consolidated, Gulf Production 2.
Kishi-Lang, Gulf Production, 8-A.
Granger, Gulf Production 1.
Peveto, Gulf Production 8.
Chesson, Gulf Production 2, 3. (Deepening.)
Rigs, 11; wells drilling, 18; total, 29.

PIERCE JUNCTION
Wells Drilling
Howe, H. R. Cullen 5.
Taylor, Gulf Production 9. (W.O.)
Wells drilling, 2.

SPINDLETOP
Wells Drilling
Fort Worth, Wilson-Broach 12.
Gladys, Gulf Production 209.
Wells drilling 2.

SARATOGA
Wells Drilling
B-212, Rio Bravo Oil 212.
Booker, Skinner Oil 1.
T. C., Sun Oil Co. 58.
Wells drilling, 3.

SOUR LAKE
Rigs
Rogers, T. G. Barkley 3.
Fee, Gilbert Oil 93 (W.O.); 95.
Minor, Minor Oil 74.
Wells Drilling
Brown, E. C. Hankmer & Co. 2.
Hardin-West, Humble Oil & Ref. 38.
Fee, J. S. Jackson 3. (W.O.)
Rigs, 4; wells drilling, 3; total, 7.

VINTON
Wells Drilling
Star, Gulf Refining 33. (Deepening.)
Vincent, Gulf Refining 37.
Weeks, Just Oil & Refining 1.
Gray, Marrs L. McLean 5. (W.O.)
Gray, 1-A, 26 Texas Co.
Vincent, Edgerly Petroleum 1.
Lisso, Edgerly Petroleum 2.
Vincent, Vinton Petroleum 13 (Dpng.); 14.
Parks, Wilson & Broach 6.
Wells drilling, 11.

WEST COLUMBIA
Rigs
Pipkin-Lee, Humble Oil & Refining 12.
Wells Drilling
Hogg, The Texas Co. 66. (W.O.)
Coons, Humble Oil & Refining 6 (W.O.)
Rigs, 1; wells drilling, 2; total, 3.

LOCKPORT (La.)
Wells Drilling
Gray, Vacuum Oil 1.
Bordages, Vacuum Oil 1.
Farquay, Vacuum Oil 1.

SOUTHWEST FIELDS
LULING
Rigs
Rodenburg, Harper & Jarmon 1.
Garrett, Garrett Oil 1.
Wells Drilling
Fee, M. O. Rayor 2.
Trammell, United North & South Oil 7.
Branyon, United North & South Oil 2.
Tabor, Grayburg Oil 12.
Allen, J. K. Hughes Co. 20.
Baker, United North & South Oil 22, 25.
Schubert, Magnolia Petroleum 12.
Rynon, Green & Ross 1.
Lynch, Jennings and others 1.
Glenwinckle, United North & South Oil 1.
Rigs, 3; wells drillings 11; total, 14.

LAREDO POOLS
Rigs
Olsan Oil 6.
Ochoa, Magnolia Petroleum 12.
——— Cornhuskers Oil 5.
Los Ojulas, Nueva Oil 4.
Wells Drilling
——— Chenault & Allen 2. (Deepening.)
M-S, Christen-Sprague 1. (Shut down.)
Puig, Rydal Oil 2.
Los Ojulas, Richmond-Garcia Oil 3.
———Wheatley Oil 12.
Westcott, Mangon Oil 2.
——— Witherspoon Oil 1.
——— Caroline-Texas Oil 6. (Shut down.)
Bruni, Cole Petroleum 5.
Wolcott, Magnolia Petroleum 14.
Rigs, 4; wells drilling, 10; total, 14.

SOMERSET
Wells Drilling
Ernst, Grayburg Oil 30.
Smith, Helvetia Copper 3.
Hamilton, Gas Ridge Development 14.
Brown, Howard & Hindman 10.
Touchstone, Somerset Crude Oil 4.
Wells drilling, 5.

CALLIHAM
Rigs
Calliham, Black Panther Oil 1.
Nichols, Southern Natural Gas 10.
Wells Drilling
Frio, Coyle-Concord Oil 4. (Shut down.)
Holmes, Southern Nat. Gas 1. (Shut down.)
Cox, McVey Brothers 5.
Nichols, Grubstake Investment 3.
Rigs, 2; wells drilling 4; total, 6.

ROCKDALE-MINERVA
(Milam County)
Rigs
Fee, Roundtree Oil 10, 11.
Brown, Fuchs Oil 1.
Lewis, R. L. Long 1.
Wells Drilling
Miller, Sinclair Oil & Gas 1.
Lucas, Fogel Oil 1.
Sterlisky, Noack Oil 2.
McClelland, Fogel Oil 13. (Shut down.)
Ashley, F. D. Tuttle 1.
Rigs, 4; wells drilling, 5; total, 9.

JIM HOGG COUNTY
(Henne, Winch & Fariss Pool).
Rigs
Las Animas, Block 10, Plateau Oil 1.
Las Animas, Block 15, Plateau Oil 1.
Martinez, Henne, Winch & Fariss, 5.
Block 1, Witherspoon Oil 1.
Block 2, Witherspoon Oil 1.
Wells Drilling
Martinez, Henne, Winch & Fariss 4.
Thompson, Magnolia Petroleum 1.
Holbein, Shasta Oil 1.
Las Animas, Weber Oil 4.
Randado, J. W. Pippin 1.
Block 16, O. W. Killam 1. (Shut down.)
Block 16, Texco Oil 1.
Allen, Rydal Oil 1.
Rigs, 5; wells drilling 8; total, 13.

N. LOUISIANA-ARKANSAS

Summary of Field Operations

Districts—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Union County (Smackover & El Dorado)	13	530	4	0	21	51	72
Ouachita Co. (No. Smackover)	16	1,259	0	1	18	44	62
Stephens Field (Columbia & Ouachita Cos.	1	25	0	0	0	2	2
Nevada County	0	0	0	0	1	5	6
Bellevue	1	0	1	0	0	1	1
Caddo	4	55	1	1	3	2	5
Cotton Valley	10	15,285	0	3	11	18	29
La. wildcats	18	5	5	12	15	58	73
Ark. wildcats	8	0	8	0	5	31	36
Total Nov.	71	17,159	19	17	74	212	286
Total Oct.	91	13,370	16	20	59	196	255
Difference	20	3,789	3	3	15	16	31

WELLS COMPLETED
UNION COUNTY, ARK.

22-16-15 Dumas, Ark. Fuel Oil Co. 2.. dry
36-16-16 Murphy, Flo-Ark Oil Co. 1... dry
5-16-16 Louis Werner, Gulf Ref. Co. 22 50
16-16-16 Saxon, Lanier et al 1 ..... dry
13-16-17 Campete-Campbell, Magnolia Petroleum Co. 3-B 70
28-16-15 Dumas, Nikander and others 1 dry
19-16-15 Scott, Ohio Oil Co. 4 15
15-16-16 Craig, Pure Oil Co. 10 40
20-16-15 Wilson, Pure Oil Co. 3 30
23-16-15 Murphy, E. G., Sam Richardson, 4 60
25-16-16 Burton, Star Oil Co. 3..... 140
4-16-15 Hays, The Texas Co. 1 70
15-16-15 Craig, United Central Oil Corp. 5 55

Wells completed 13
Production 530
Dry 4

OUACHITA COUNTY

30-15-16 Myar estate, Arkansas Invincible Oil Co. 3 10
26-15-16 Davidson, Crosbie, J. F. 2..... 35
36-15-16 McKenzie, Duho Oil Co. 12.... 30
28-15-16 Hughes, El Dorado Union Oil Co. 7 100
29-15-16 D. Minor, Forest Oil Co. 5.... gas
23-15-17 Green, Hunt and others B-1.. 120
23-15-17 Green Hunt et al C-2 500
26-15-17 Clawson, Magnolia Pet. Co. 1.. 102
32-15-16 Nettie Patton, Magnolia Pet. 3 52
31-15-16 W. F. Patton, Magnolia Pet. 4 30
29-15-16 Fincher, Maxda Oil Co. 1.... 100
26-15-17 Smith, McCorkle et al 1 25
27-15-17 Hildreth, Peace et al 1 15
28-15-16 Hardin, Parrish et al 2 60
25-16-17 Jeffus, Ramage et al 3 40
25-15-17 Brierton, Reynolds, J. D. 3.... 40

Wells completed 16
Production 1259
Gas 1
Gas production 5,000,000

COLUMBIA COUNTY—STEPHENS FIELD

25-15-20 J. R. Hammond, Magnolia Petroleum Corp. 2 25

COTTON VALLEY

14-21-10 S. J. Merritt, Fortuna Oil Co. 3 50
15-21-10 W. Cox, Gulf Refining Co. 1 ... gas
24-21-10 Bodcau Lumber Co., Humble Oil & Refining Co. B-1.....2500
28-21-10 Bodcau Lumber Co., Humble Oil & Refining Co. B-3 2,000
24-21-10 M. S. Davis, Humble Oil & Refining Co. 1 10,000
14-21-10 Merritt, Humble Oil & Refining Co. 3 75
28-21-10 H. C. Gray, Louisiana Oil Refining Corp. 1 500
22-21-10 Bank of Cotton Valley, Ohio Oil Co. 3 ..... gas
15-21-10 Bodcau Lumber Co., Ohio Oil Co. 4 ..... gas
15-21-10 Bodcau Lumber Co., Ohio Oil Co. 5 160

Wells completed 10
Production 15285
Gas 3
Gas production 67,000,000

CADDO

13-21-15 Robertshaw, Dixie Oil Co. 43 gas
13-21-15 Robertshaw, Dixie Oil Co. 64.. 7
5-20-15 Doan-Thigpen, Fortuna Oil Co. 12 48
14-20-16 Ferry Lake Gulf Ref. Co. 218 dry

Wells completed 6
Production 44
Dry 1
Gas 1
Gas production 45,800,000

BELLEVUE

26-19-11 Smith, Autry Oil Co. 6..... dry

LOUISIANA WILDCATS

BIENVILLE PARISH

8- 6- 9 Thomas, Borden et al 1 ..... dry

BOSSIER PARISH

22-16-12 Hodges, Davis & Burch ..... gas
25-16-12 Hodges, Palmer Corp. B-6.... gas
10-17-12 McDade, Skannall et al 3 .... gas
4-18-11 McGuffin, Zing et al 1 ..... dry

Wells completed 6
Dry 4
Gas 1
Gas production 36,000,000

CADDO PARISH

23-19-14 Levy Realty & Planting Co., Collins et al 1 6
15-23-16 Rodessa, La. Tex. Community Oil Co. 1 ..... dry
18-17-16 Waterman, Waterman Drilling Co. 1 ..... gas
19-17-16 Stringfellow, Wells R. O. 1.. gas

Wells completed 6
Production 4
Dry 1
Gas 1
Gas production 17,000,000

CLAIBORNE PARISH

35-23-16 Palmer, Gulf Refining Co. 216 dry

MOREHOUSE PARISH

14-21- 5 Betx. Oil Field Explo. Co. 1.. gas
Gas production 3,000,000

OUACHITA PARISH

36-19- 4 Wetzell, Chester Carbon Co. 1 gas
10-19- 5 Fee, Ladel et al 30 ..... gas
7-19- 5 Fee, Southern Carbon Co. 40.. gas
11-19- 4 Ladel, The Texas Co. 2 ..... gas

Wells completed 6
Gas 4
Gas production 78,000,000

UNION PARISH

32-21- 4 Grayling, Danziger et al 1.... gas
Gas production 14,000,000

WEBSTER PARISH

34-23-11 Baker, Butler-McMurry Drilling Co. 1 ..... gas
Gas production 30,000,000

WEST CARROLL PARISH

22-23-10 Bain Wagon Co., Orion Oil Co. 2 dry

ARKANSAS WILDCATS

HEMPSTEAD COUNTY

36-12-27 Adams, G. W. Simmons, trustee 1 ..... dry

LITTLE RIVER COUNTY

29-13-29 Toland Taylor, Red Valley Oil Co. 1 ..... dry

NEVADA COUNTY

12-13-21 Honea, Kenark Oil Co. 1..... dry
17-10-22 Cornelius, Lockhart et al 1.. dry
11-12-23 Eaves, Murry et al 1 ..... dry
1-10-23 Suckle, Wiseman et al 1 ..... dry

Wells completed 4
Dry 4

OUACHITA COUNTY

22-13-16 Snow, Crusader Pipe Line Co. 1 dry

UNION COUNTY

13-17-13 Burnside, Teter, E. T. 1 ..... dry

SMACKOVER DISTRICT
UNION COUNTY, ARKANSAS
Rigs

8-16-15 Bilyew, Anderson et al 1.
12-16-17 Scott, Angelina Oil Co. 1.
1-16-17 L. Werner, Arkansas Drilling Co. 1.
7-16-16 Carroll, Chambles Drilling Co. 1.
14-16-15 Giller, Crawford & Sebastian 1.
6-16-16 L. Werner, Gulf Ref. Co. 24 & 26.
5-16-16 L. Werner, Gulf Refining Co. 16.
2-16-15 M. Alphin, Gulf Refining Co. 3.
2-16-15 H. Murphy, Gulf Refining Co. 1.
24-16-16 Moore, Kouri et al 2.
22-18-14 Terrell, Lemond et al 1.
31-16-14 Davis, Liberty Oil Co. 1.
16-16-15 Edwards, Owen trustee 2.
18-16-15 Berry, Penguin Oil Co. 3.
13-16-16 Hearin, Phillips Petroleum Co. 1.
17-16-15 LeCrow, Rogers et al 2.
5-16-16 Saxon, Smitherman-McDonald B-4.
1-16-17 Neely, Sutherland et al 4.
25-16-16 Burton, United Central Oil Corp. 4.
15-16-15 Craig, United Central Oil Corp. 6.

Wells Drilling

1-16-17 LaGrone, Arkansas Fuel Oil Co. 5.
12-16-17 Patterson, Ark. Invincible Oil Co. 1.
1-16-17 Freeman, Estes et al 4.
8-16-16 Childs, Federal Petroleum Co. 1.
7-16-15 Thompson, Gladys Belle Oil Co. A-1
14-16-15 Murphy, Higgins Oil & Ref. Co. A-1
29-17-14 Smith, Imperial Oil Co. 3.
17-17-15 Ford, Johnson, D. J. trustee 1.
26-16-16 Murphy, Jones E. M. 1.
3-16-15 Williams, Kinnebrew et al 4.
3-16-15 Graves, Lion Oil & Ref. Co. 5.
13-16-17 Goodwin-Campbell, Magnolia Petroleum Co. 2.
2-16-17 Smith, Magnolia Petroleum Co. 1.
4-16-15 Hays, Marine Oil Co. 2.
15-17-16 Dumas, Marr et al 1.
29-17-14 Smith, Meyerscough et al 3.
1-18-14 Frazier, Natural Gas & Petroleum Co. 3.
13-19-17 Fee, O'Brien, P. F. et al 1.
28-16-14 Long, Ray et al 1.
6-16-16 Hodges, Rutledge et al 3.
8-16-16 Laney Heirs, Simms Oil Co. 1.
1-16-17 Neely, Sutherland et al 3.
29-17-14 Smith, Terry Summerfield Oil Co. 6.
3-16-15 Alphin, The Texas Co. 1.
15-16-16 McAdeo, The Texas Co. 1.
36-17-14 Williams, Wabler et al 1.
6-16-16 Rice, Weatherbee et al 3.
4-16-15 Hays, Wilson, Nye 3.

Wells Shut Down

4-16-15 Galloway, Amerada Pet. Corp. 1.
21-16-15 Clark, Baggott et al 1.
14-19-11 Union Sawmill Co., Beery et al 1.
25-16-16 Bruton, Cherokee Petroleum Co. 1.
1-16-17 Neely, Clark H. E. 2.
19-16-15 Alphin, Clark J. W. 3.
9-16-15 Palmer, Clark, J. W. 1.
14-16-16 Thornton, Coker Drilling Co. 1.
5-17-15 Thompson, East et al 1.
1-16-17 Freeman, Estes et al 3.
12-16-16 Burton, Freeman et al 1.
6-16-16 Hodges, Gilliland, W. H. A-1.
11-19-12 Teele, Harrell et al 1.
20-16-15 Cook, Harris et al 1.
23-16-16 Dumas, Hunt et al 1.
24-16-16 Moore, Kouri et al 2.

10-19-15 Roberts, Montgomery et al 1.
7-16-16 Tatum, Plateau Oil Co. 1.
10-16-16 Hicks, Smitherman-McDonald 1.
12-16-17 Hodges, Steel Oil Co. 3.
10-16-14 Goodwin, Traffic Oil Co. 1.
1-18-17 Johnson, Wall et al 1.
1-18-17 Hodges, Wright et al 2.
Rigs, 21; wells drilling, 51; total, 72.

OUACHITA COUNTY

Rigs

24-15-15 Snyder, Arkansas Fuel Oil Co. 4.
12-15-17 Wells, Atlantic Oil Prod. Co. B-2 and B-5.
12-15-17 Goodwin, Bray-Hawthorne 1.
11-15-16 Hughes, Burton trustee 11.
10-15-16 Hughes Galloway et al 2.
10-15-17 LaGrone, Gilliland Oil Co. S-5.
10-15-16 McRea, Gilliland Oil Co. 6.
12-15-17 Myatt, Hunt et al 1.
4-16-15 Berg, Leon et al 2.
10-14-18 Graves, Reynolds & Thompson 1.
10-15-17 Wells, Shmuller, H. A. 1.
10-15-15 Berg, Simms Oil Co. E-2.
10-15-16 Joyce, Sure Oil Co. 2.
10-15-16 Hughes, Sutton et al 8.
10-15-16 Hughes, Sutton et al 10.
10-15-16 Jeffus, Staves et al 3 and 4.

Wells Drilling

13-15-17 Copenhaven, Bray-Hawthorne 1.
11-15-17 Elliott, Bray-Hawthorne 1.
10-15-16 Holmes, Burton trustee 10.
10-15-17 Smith, Clark, H. E., 1.
10-15-17 Yarbrough, Clark, H. E., 1.
4-16-15 Murphy, Clark & Melat 2.
11-15-16 Fee, Forest City Box Co. 1.
10-15-16 Mullins, Galloway et al 5 and 6.
10-15-16 Mullin, Hildreth et al 1.
10-15-17 Anderson, Hunt et al A-3.
10-15-16 Stringfellow, Hurley et al 4.
10-15-17 Brown, Magnolia Pet Co. 3.
12-15-16 Patton, Magnolia Pet. Co. 4.
11-15-16 W. F. Patton, et al, Magnolia Pet. Co. 3.
10-15-15 Laney, Meek, J. H., trustee, 2.
10-15-16 Hardin, Miller et al 2.
17-15-16 Mullins, Morris Drilling Co. 2.
13-15-17 Green, Riggs et al 1.
17-15-16 Hardin, Sun Co. 1.
10-15-16 Hughes, Sutton et al 9.
10-15-17 Reynolds, The Texas Co. 1.
10-15-16 Schoolhouse, Winner et al 1.

Shut Down

10-15-16 Rowland, Atlantic Oil Prod. Co. C-1.
10-15-17 Keller, Finley et al 1.
10-15-16 Mullins, Forest Oil Co. 1.
17-15-16 Mullins, Forest Oil Co. 11.
10-15-17 W. A. Smith, Gilliland Oil Co. 4.
12-15-17 Riley, Hammon et al 1.
4-16-15 Hill, Invaders Oil Co. 1.
21-15-16 Ritchie, Johnson Drilling Co. 1.
10-15-16 Mullins, Marr Oil Corp. 3 and 4.
10-15-17 Smith, McCorkle et al 2.
4-16-15 Umsted, Olvey et al 1.
10-15-16 Hardin, Parish et al 1.
10-15-16 Myar, Riggs Drilling Co. 3.
10-15-16 Stringfellow, Ross et al 1.
10-15-17 Shirey, Smith, J. S., 1.
12-15-17 Hoffman, Southern Oil Co. 1.
12-15-15 Umsted, Standard Oil Co. 12.
10-15-16 LaGrone, Stumph & Todd 4.
4-16-15 Goodwin, Wilson Pet. Co. 1.
Rigs, 18; wells drilling, 44; total, 62.

STEPHENS FIELD

Wells Drilling

1-15-19 Morgan, Morgan & Caughan 1.

COLUMBIA COUNTY

Wells Drilling

16-15-20 Watson, Magnolia Pet. Co. 2.

Shut Down

13-15-20 Smart, Hickman et al 2.
Rigs, 0; wells drilling, 1; total, 1.

NEVADA COUNTY

Rigs

15-14-21 Blacke et al, Ames et al 1.

Wells Drilling

16-14-21 E. E. Womack, Ames et al 1.
10-14-21 McKinney, Greeson et al 1.
10-14-20 Phillips, Ouachita Valley Oil Co. 1.
16-14-21 Womack, Smitherman-McDonald 4.

Shut Down

16-14-21 Butcher, Steele & Sandlin 1.
Rigs, 1; wells drilling, 4; total, 5.

BELLEVUE FIELD

Shut Down

27-19-11 Catlett, Webb et al 2.

CADDO

Rigs

13-21-15 La. State, Dixie Oil Co. 4.
5-20-16 R. Rives et al, Wm. Gross et al 1.
22-20-16 Ferry Lake, Gulf Ref. Co. 219.

Wells Drilling

13-21-15 La. State, Dixie Oil Co. 3.
3-20-15 Doan-Thigpen, Fortuna Oil Co. 13.
Rigs, 3; wells drilling, 2; total, 5.

COTTON VALLEY

Rigs

24-21-10 Pardee, Alabama Pet. Co. 4 and 5.
19-21- 9 Ramsey, Alabama Pet. Co. 1.
29-21-10 Smith, Alabama Pet. Co. 1.
19-21- 9 Crichton, Fortuna Oil Co. 1.
28-21-10 Bodcau, Humble Oil & Ref. Co. B-6.
24-21-10 Davis, Humble Oil & Ref. Co. 2.
26-21-10 Gray, Humble Oil & Ref. Co. 1.
22-21-10 Bank of Cotton Valley, Ohio Oil Co. 2.
23-21-10 Holloway, Ohio Oil Co. 2.
28-21-10 Gleason, Tidal Oil Co. 1.

Wells Drilling

24-21-10 Pardee, Alabama Pet. Co. 3.
15-21-10 W. Cox, Fortuna Oil Co., 1.
14-21-10 L. Merritt, Fortuna Oil Co. 4.
14-21-10 S. J. Merritt, Fortuna Oil Co. 4.
24-21-10 Bodcau, Humble Oil & Ref. Co., B-2 and B-4.
13-21-10 Bodcau Humble Oil & Ref. Co., B-5.
28-21-10 Nelson, Louisiana Oil Ref. Corp. 1 and 2.
28-21-10 Coyle, Moffatt & Murphy 1.
15-21-10 Bodcau, Ohio Oil Co. 8, 9 and 10.
29-21-10 Miller, Palmer Corp. 1.
21-21-10 Coyle, S. S. Raymond et al 1.
18-21- 9 A. J. Hodges, Woodley Pet. Co. 1.

Shut Down

17-19-10 Hudson, Olmstead et al 1.
8-20- 9 Bible, Stack & Eggers 1.
Rigs, 11; wells drilling, 18; total, 29.

LOUISIANA WILDCATS

Rigs

30-17- 6 Bryan, Roxana Pet. Corp. 1.
21-21-11 Rhodes, Coker et al 1.
25-16-12 Hodges, Palmer Corp. B-6.
10-18-16 Sharp, Brewer & Sewall 1.
22-23-16 Rodessa Oil & Land Co., Rowe-Daniels et al 1.
11-23-16 Pitts, Smith, B. T., trustee, 1.
13-17-16 Bryson, Waterman Drilling & Dev. Co. 2.
27-23-11 Frazier, Arkansas Fuel Oil Co. 1.
6-22- 9 Wilet, Bethany Oil & Gas Co. 2.
6-19- 5 Taylor, J. P. Evans et al 1.
1- 7- 1 Ball, Grant Parish Pet. Co. 2.
3-21- 4 Tensas Delta, Natural Gas Prod. Co. 4.
35-20- 5 Pratt, Oil Field Exploration Co. 1.
16-22-3w James, Simms Oil Co. 1.
18-22-2w Voss, Roxana Pet. Corp. 1.

Wells Drilling

31-16-11 Van Hoose, Arkansas Natural Gas Co. A-3.
31-16-11 McAnn, Davis & Hanby 1.
31-16-11 McAnn, Palmer & Hanby 4.
31-16-11 McDade, Standard Oil Co. 4.
32-23-11 Bollinger, Wetherbee, G. W., 1.
9-17-16 Florsheim, Glassell & Myers 1.
24-23-15 Caddo Mineral Land Co., Lewis Oil Corp. 5.
15-18-15 Bickham, Richardson Oil & Gas Co. 1.
18-17-16 Waterman, Waterman Drilling & Dev. Co. 2.
22-19- 5 Fields, Claiborne-Lincoln Syndicate 3.
13-22- 7 McElweel, El Dorado Chief Oil Co. 1.
28-21- 5 Fortson, Woodley & Collins 1.
36-11-14 Pollock, Greyhound Syndicate 1.
3-11-14 Palmer, Tarver et al 3.
21-11-2e Urania, Bur Ban Oil Co. 2.
13-20-3w Barrett, Buckner et al 1.
33-20- 5 White, Ladel et al 3.
27-21- 4 Fee, Stovall Drilling Co. 1.
10-19- 5 Collins, Consumers Gas Co. 1.
24-18-2e Goodwin, Dickson & Frue 1.
20-19- 5 Lee, Ladel et al 31.
12-19- 4 Carter, Montgomery et al 1.
40-20- 4 Trezevant, Ouachita Natural Gas Co. 3.
29-19- 5 Fee, Southern Carbon Co. 39.
7-19- 5 Fee, Southern Carbon Co. 41 and 42.
28-19- 5 Daughtrie, Union Gas & Prod. Co. 4.
36-20- 4 Cole, United Oil & Gas Co. 2.
6-19- 2 Feazel, Jones-Walker Oil Co. 1.
8-21-4e Grayling, Natural Gas Prod. Co. 2.
33-23-11 Pine Woods Lumber Co., Beichic & Laskey 5.
1-22-10 Wiley, Bethany Oil & Gas Co. 1.
9-23-10 Roberts, Haehnlen, W. L., trustee, 1.
35-23-20 F. M. Tinsley, The Texas Co. 1.

Shut Down

11-20-13 Bernstein, Armistead, trustee, 1.
15-22-12 Bodcau Lumber Co., Estes et al 1.
18-18-11 Hobbs, Square Deal Oil Synd. 1.
27-19-11 Catlett, Webb et al 2.
30-19-15 Nickerson, Arkansas Caddo Oil Co. 1.
2-16-15 Gardner-Blades, Caddo Western Oil Co. 1.
27-16-14 Alexander & Ledbetter, Crude Oil Co. 1.
9-20-16 Jeems Bayou Hunting & Fishing Club, Reynolds Oil & Gas Co. 4.
21-14-4e Fee, Culver et al 1.
20-21- 9 Aubry, Clock Oil & Gas Co. 1.
34-20- 6 Harmon, Pomeroy et al 1.
18-12-14 Sutherland, Wright, Dr. C. C., et al 2.
22-10-2e Urania, Columbia Oil & Gas Co. 1.
22-11-2e Urania, Gulf Ref. Co. A-1.
27-10-2e Louisiana Central Lumber Co. 2.
20-10-2e Urania, Urania Pet. Co. 4.
26-20- 5 Perry, McKenzie et al 1.
13-12-10 Marston, Coushatta Synd. 1.
2-14-12 Fee, LeGrande et al 3.
25-21-3w Heard, Cargile et al 1.
7-23-1e Frost-Johnson Lumber Co., Love et al 1.
18-23-1e Templeton, Palmer, J. F., 1.
17-23-1e Clark, Union Parish Drilling Co. 2.
5-12-1w McCarty, Galloway & Arrendale 1.
Rigs, 15; wells drilling, 58; total, 73.

ARKANSAS WILDCATS

Rigs

22-11-24 Walker, Wooten, J. G., 1.
3-20-24 Red River Land Co., Ken-Saw Pet. Co. 2.
33-10- 6 Jones, Bennett et al 1.
22-14-26 Gillespie, Munn Oil & Gas Co. 1.
36-10-23 E. E. Womack, Arkrado Oil Co. 1.

Wells Drilling

12-17-22 Fullenweider, Moore et al 1.
25-12-21 Davis, Phillips et al 1.
7-19-19 Emerson, Russell & Kent 1.
5-13- 6 Harris, Rhodes et al 1.
31-14-23 Ford, Fullilove Drilling Co. 1.
3- 9- 8 Fee, Cambrian et al 1.
22-10-23 Graves, Zing et al 1.

Shut Down

4-16- 7 Fee, Spoonse et al 1.
26-16-13 Freeman-Smith, Harris & Bickley 1.
35-10-20 Burroughs, Southern Drilling Corp. 1.
18-11-11 Wrod, Stark & O'Mara 1.
23-18-23 Robinson, Brown et al 1.
12-17-22 Sauter, Hargis et al 1.
30-19-18 Hays, Hosey-McDonald 1.
12-17-22 Sorrell, Johnson et al 1.
20-16-12 Watts, Miller et al 1.
35-18-19 Duffer, Smith & Compton 1.
1-19-21 Williams, Virgil Heath, trustee, 1.
10-13-26 Karnes, Graves et al 1.
12-13- 6 Trotter, King & Wilson 1
23-13- 6 Fee, Stenk et al 1
8- 6-11 Pike, Haley & Evans 1.
17-11-25 Nichols, Hempstead Oil Co. 1.
17-12-23 Yates, Orr et al 1.
7- 3-10 Hinsley, DeCou Oil Co. 1.
25-16-25 Renick, Wilcox et al 1.
2-13-31 Allen, Grote et al 1.
10-11-21 Hawkins, Johnson et al 1.
33-14-29 Thompson, Kress, A. G., 1.
10-12-10 Henry, Prescott Oil Co. 2.
16-14-21 Butcher, Steele & Sandlin 1.
Rigs, 5; wells drilling, 31; total, 36.

ROCKY MOUNTAIN AREA

Summary of Field Operations

WYOMING

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy ..	0	0	0	0	0	3	3
Salt Creek ...	48	6,305	1	0	55	71	126
Big Horn Basin	1	10	0	0	12	50	62
Lance Creek .	0	0	0	0	0	5	5
Lost Soldier .	5	135	2	1	3	38	41
Rock River ..	1	0	1	0	1	17	18
Fremont Co. .	1	0	1	0	0	26	26
Osage	0	0	0	0	7	11	18
Natrona Co. .	1	0	1	0	0	19	19
Lincoln Co. ..	0	0	0	0	4	9	13
Baxter Basin .	0	0	0	0	1	11	12
Miscellaneous.	0	0	0	0	0	17	17
Total Nov. .	57	6,450	6	1	83	277	360
Total Oct. .	58	6,047	5	3	90	331	421
Difference .	1	403	1	2	7	54	61

MONTANA

Sunburst	13	1,387	2	0	7	35	42
Miscellaneous.	0	0	0	0	6	72	78
Total Nov. .	13	1,387	2	0	13	107	120
Total Oct. .	17	1,035	8	0	29	137	166
Difference..	4	352	3	0	16	30	46

UTAH

All fields ...	1	0	1	0	2	26	28
October	1	0	0	1	2	26	28
Difference..	0	0	1	1	0	0	0

COLORADO

No completions in November.

NEW MEXICO

All fields	3	95	0	0	2	22	24
October	5	565	2	0	2	25	27
Difference..	2	470	2	0	0	3	3

WYOMING

BIG MUDDY FIELD

Wells Drilling

8-33-76 Humphrey Oil Co. 38.
2-33-76 Fenix, Mutual Oil Co. 4.
8-33-76 Carey, Texas Prod. Co. 32.
Wells drilling, 3.

SALT CREEK

Rigs

26-40-79 NE Wyoming Oil Fields 36A, 26-A.
26-40-79 NE Wyoming Asso. 18-A.
26-40-79 SW Wyoming Asso. 24-A.
14-40-79 NE Midwest Oil Co. 15-A, 17-A.
17-39-78 SE Marine Oil Co. 2, 7-M.
19-40-78 NE Continental Prod. Co. 3-BS.
5-39-78 SW Carter Oil C. 12-R.
32-40-78 NW Continental Prod. 12-B.
26-40-79 NW Wyoming Asso. 19-A.
34-39-78 SW Mammoth Oil Co. 302.
34-40-78 NW Mammoth Oil Co. 205.
28-39-78 NW Mammoth Oil Co. 405.
28-39-78 SE Mammoth Oil Co. 406.
10-40-79 SE Empire State Oil Co. 24-A.
11-39-79 SW E. T. Williams Oil Co. 2-A.
13-38-78 SW Wyoming Teapot Oil Co. 1.
16-39-78 NE Nicalaysen et al 1.
10-38-78 NW Mammoth Oil Co. 202.
19-40-79 NE Norris Oil Co. 18-A.
26-40-79 NE Wyoming Asso 18-A
8-39-78 NE Western States Oil Co. 21-A.
11-39-79 NW Salt Creek Cons. 2-A.
6-39-78 SE Mt. and Gulf 8-A.
19-40-79 SW Midwest Oil Co. 36-A.
26-40-79 SE Midwest Oil Co. 1-A.
13-40-79 SE Mt. and Gulf 4-A.
12-40-79 NW Midwest and Wyo Asso. 24-A.
17-39-78 NW Western States 13-A.
29-40-79 SW Continental Prod. 6-S, 7-S.
5-39-78 NW Carter Oil Co. 12-D, 13-D.
2-39-79 SE Sinclair Wyoming 11.
1-39-79 SE Mutual Oil Co. 11-A.
2-39-79 SW Mutual Oil Co. 8-A.
5-39-79 SE M. B. Schuster 15-A.
20-39-78 Tract E. T. Ohio Oil Co. 7.
12-39-78 Castle Rock, Ohio Oil Co. 11.
12-40-79 NW Wyoming Asso. 33-A.
34-40-79 SE Wyoming Asso. 21-A.
23-40-79 SE Wyoming Asso. 15-A.
30-40-78 SW Wyoming Asso. 13-A, 15-A.
24-40-78 NE Wyoming Asso. 22-A.
24-40-78 NE Wyoming Asso. 33-A.
24-40-78 SE Wyoming Asso. 36-A.
6-39-78 NE Mt. and Gulf 29-A.
19-40-78 SW Midwest Oil 36-A.
35-40-78 NE Midwest Oil Co. 25.
1-39-79 NE Midwest Oil Co. 26-A.
25-40-79 NE Midwest & Wyo. Asso. 1-A.
18-40-78 NW Kasoming Oil Co.

Wells Drilling

23-40-78 NW Wyoming Oil Fields 26-A.
26-40-78 NW Wyoming Asso. 21-A.
35-40-79 NW Wyoming Asso. 4-A.
15-40-79 NE Wyoming Asso. 21-A.
26-40-79 SW Wyoming Asso. 34-A.
31-40-78 NE Salt Creek Cons. 15-A.
31-40-78 SE Salt Creek Cons. 15-A, 19-A.
2-39-79 NW Salt Creek Cons. 27-A.
31-40-78 SW Salt Creek Cons. 21-A.
13-40-79 NE Mt. and Gulf 35-A, 4-A.
26-40-79 SE Midwest Oil Co. 14-A.
34-40-79 NE Midwest Oil Co. 16-A.
35-40-79 NE Midwest Oil Co. 12 and 13.
13-40-79 NW Midwest Wyo. Asso. 33-A, 22-A
12-40-79 SW Midwest Wyo. Asso. 4-A.
30-40-78 NW Utah Oil Ref. 14-A, 23-A.
19-40-78 NE Continental Prod. 4-B.
30-40-78 NE Continental Prod. 12-B.
32-40-78 NW Continental Prod. 13-B.
30-40-78 NE Continental Prod. B-14.
17-39-78 NE Carter Oil Co. 13-P.
2-39-79 SW Mutual Oil Co. 4-LS.
18-40-78 SW Wyo. Kans. Synd. 6.
23-40-79 NW Wyoming Oil Fields 34-X.
23-40-79 SW Wyoming Oil Fields 8-A.
26-40-79 SW Wyoming Asso. 19-A.
35-40-79 NW Wyoming Asso. 33-A.
26-40-79 NE Wyoming Asso. 29-A.
31-40-78 NE Salt Creek Cons. 10-A.
31-40-78 SE Salt Creek Cons. 26-A.
34-40-79 SE Salt Creek Cons. 22-A.
17-39-78 NW Western States 25-A.
30-40-78 NE Bonfils Oil Co. 31-A, 20-A.
31-40-79 NE Salt Creek Cons. 6-A, 1-A.
6-39-78 SE Mt. and Gulf 21-A.
12-40-79 SW Midwest & Wyo Asso. 2-A.
12-40-79 NW Midwest & Wyo. Asso. 35-A.
15-40-79 NE Wyoming Asso. 36-A.
18-40-78 SW Wyokans (Marine) Marine Oil Co. 5.
5-39-78 NE Western States Oil Co. 30-A.

Shut Down

10-40-79 SE Empire State Oil Co. 25-A.
6-39-78 SW Staley Syndicate 5.
28-39-78 NE Mammoth Oil Co. 101.
21-39-78 SW Mammoth Oil Co. 304.
18-40-78 SW Continental Prod. 1-W.
28-40-79 SE J. C. Smith 1-S.
29-39-78 NE Mammoth Oil 108.
28-39-78 NE Mammoth Oil Co. 304.
28-39-78 SW Mammoth Oil Co. 302.
28-38-78 NW Mammoth Oil Co. 205.
4-38-78 NE Mammoth Oil Co. 101.
23-39-79 NE Evans Oil Co. 1.
29-39-78 NW Omaha Lusk Oil Co. 1.
2-38-78 NE Teapot Dom Synd. 34-A.
24-39-79 NE Mutual Oil 22-A.
2-38-78 NE Teapot Dome Syndicate 18-A.
27-40-79 SW Salt Creek Cons. 36-A.
26-40-79 SW Midwest Oil 13AX.
6-39-78 NE Mountain & Gulf 34-A.
17-39-78 SE Marine Oil 8.
2-39-78 SE Sinclair Wyoming 16.
34-39-79 SW Mutual Oil 35-A.
7-39-78 SE Mutual Oil 1, 2.
28-40-79 SW Jupiter Oil Co. 27-A.
Rigs, 55; wells drilling, 71; total, 126.

LANCE CREEK

Wells Drilling

26-36-65 Rodeo, Buck Creek Oil.
3-35-65 Mutual Oil 7, 8.

Shut Down

5-35-65 Lamb, Ohio Oil Co. 5.
18-35-65 NE¼ Union Oil 1.
Rigs, 0; wells drilling, 5; total, 5.

BIG HORN BASIN

Rigs

33-56-97 Cross Gas Co., Ohio Oil 2.
23-44-95 Flavin, Ohio Oil 1.
5-47-90 Heltzler, Ohio Oil 1.
2-44-96 F. A. McPherson.
32-56-97 Howell, Occidental O. & G.
33-55-95 Westland Oil Co.
8-43-91 Murphy Dome, Producers & Refiners 1.
31-43-90 Utah O. & R. 3.
10-54-95 Western Oil Co. 1.
8-51-100 Sonners, Ohio Oil 2.
17-46-98 Washakie 12, Ohio Oil 1.
7-46-98 Washakie 6, Ohio Oil 2.

Wells Drilling

20-46-98 Mill Iron, Ohio Oil 68.
8-51-100 Sonners, Ohio Oil 1.
34-43-91 Lake Creek, Union Oil Co. 1.
10-55-97 Byron Superior Oil Co.
11-45-97 SE¼ Midwest Refining 1.
31-48-99 SW¼ Midwest Refining 18.
26-46-100 Producers & Refiners 1.
20-53-100 NE¼ Pittsburgh & Southwestern Oil 1.
31-46-90 Tensleep, Ohio Oil 2.
18-46-98 Washakie, Ohio Oil 4.
35-57-97 Cowley, American Indian Oil 1.
28-44-93 West Zimmerman Butte Oil 1.
14-44-98 Western States O. & L.
19-46-98 Meetteessee, Midwest Ref. 16-A.
28-44-93 F. A. McPherson.
3-43-92 Union Oil 2.
4-50-95 NW¼ Florence Oil 1.
16-45-95 Westland Oil 1.
35-42-91 Utah O. & G. 2.
3-35-97 Royalty & Holding 1.
8-51-100 Union Oil 1.
4-50-100 Flynn & Ache 1.
31-53-100 Cody O. & G.
29-56-97 NE¼ Utah Southern Oil 1.
11-49-102 Omar O. & G.
19-46-93 Ridgely, Midwest Refining 19-A.
18-46-98 SW¼ Midwest Refining 20-A.
11-49-102 Florence Oil.
34-43-93 C. D. Markham et al.
31-56-96 California Co. 1.

Shut Down

11-49-102 T. A. Stancliff.
2-47-100 NE¼ Midwest Refining Co.
1-47-100 NW¼ Midwest Refining Co.
34-56-97 Linton, Allen Oil 1.
3-56-97 Griffin, Allen Oil 3.
35- 9-23 Elk, Midwest Refining 2.
31-40-99 NW¼ Kasoming Oil 1.
22-48-91 SW¼ Olympus O. & G.
17-49-91 Frontier O. & G.
27-46-98 Rankin, Dickie Oil 1.
8-46-98 Grass Creek Prod.
3-42-92 NE¼ Union Oil 1.
12-45-97 Midwest Refining Co.
2-56-97 Jones, Allen Oil.
32-58-99 Thompson-Elk Basin Oil.
3-56-97 Beck Pet. Co.
16-47-100 Big Horn Dev. Co.
17-46-98 Tunador Oil Co.
30-56-97 Producers & Refiners 1.
19-51-92 Bruce Holding Co.
Rigs, 12; wells drilling, 50; total, 62.

LOST SOLDIER DISTRICT

Rigs

29-23-88 SE¼ Producers & Refiners 1.
22-26-87 Govt. land, Sand Hills Oil 1.
36-25-89 NE¼ Producers & Refiners 2.

Wells Drilling

10-26-90 U. S. Pet.
3-26-90 NW¼ Texas Prod. Co.
11-26-90 Prairie Oil & Gas 57.
22-26-90 NE¼ Producers & Refiners 2.
17-26-89 SW¼ Producers & Refiners 17.
32-26-87 NE¼ Producers & Refiners 2.
26-23-88 Bair Oil.
32-26-90 Texas Prod. Co.
2-26-90 Producers & Refiners 1.
1-23-89 SE¼ Producers & Refiners 1.
20-21-80 NW¼ Producers & Refiners 1.
23-26-87 SE¼ Marvin Oil 1.
11-26-90 Kasoming Oil 4-B.
4-26-90 Sand Hills Oil 4.
12-24-89 Govt. land, Producers & Refiners 1.
7-26-89 Producers & Refiners 3, 4.
33-26-88 SE¼ Producers & Refiners 2.
25-26-88 Kasoming Oil 2-D.
27-26-87 Producers & Refiners 23.
11-26-90 NE¼ Bair Oil 1-C.
12-26-90 Texas Prod. Co.
3-26-90 SW¼ Sand Hills Oil 5.
8-25-88 NE¼ General Pet. 2.
26-25-89 NW¼ E. R. Goode.
20-21-80 U. P., Producers & Refiners 1.
26-20-88 Hatfield No. 2 Oil Co.
33-26-88 NE¼ Producers & Refiners 3.

Shut Down

28-26-88 Govt. land, Columbia Pet.
21-26-88 Portland Wyoming 1.
9-25-88 Sand Hills Oil 1, 2.
25-26-88 SE¼ Hughes Royalty 1.
9-29-90 Major Oil Co.
2-26-90 SE¼ Producers & Refiners 1.
14-26-90 Bair Oil D-3.
34-27-90 SW¼ Annabell Wyoming Oil.
35-25-88 M. M. Armstrong.
24-26-87 SW¼ Producers & Refiners 20.
Rigs, 3; wells drilling, 38; total, 41.

ROCK RIVER DISTRICT

Rigs

19-18-77 Ohio Oil 1.

Wells Drilling

12-19-78 Prairie Dog O. & G.
26-21-79 SE¼ Southwestern Pet. 1.
25-16-77 Rex Dome Oil Co.
25-16-77 Rapollo Oil 1.
34-23-79 Allen Lake, Laramie Syndicate.
22-24-78 H. & C., Ohio Oil 1.
14-15-75 SE¼ Wyoming Hollow Basin Oil.
32-16-74 G. A. Briggs et al.

Shut Down

34-23-79 Central Pipe Line Co.
14-16-77 H. & H. Oil Co.
32-16-74 Spindletop O. & G.
24-16-77 G. R. McConnell.
4-17-78 Hutton Lake Oil.
18-15-75 Apex Refining Co.
18-15-75 Pet. Oil Fields Co.
10-18-77 Carbon County Oil.
12-20-77 McLaughlin et al.
Rigs, 1; wells drilling, 17; total, 18.

FREMONT COUNTY

Wells Drilling

7-28-92 NW¼ Southwestern Pet.
15-40-101 Mack Oil Syndicate.
7-27-95 Van Wyo. Prairie O. & G.
23-32-95 Producers & Refiners 1
22- 6- 2 Miles Oil Corp.
18-27-97 Prairie O. & G. 1.
18-27-95 Prairie O. & G. C-2.
9-31-98 Martin F. Fold et al.

26- 5- 2 Connelly O. & G.
Shoshoni District, John C. Catleigh et al.
9-32-95 NE¼ Producers & Refiners 2.
Shoshoni District, Wyoming Syndicate.
15-34-90 Ward Oil Co. 1.
34- 6- 3 Kinney Coastal 2.
22- 1- 1 McDonald et al 1.
4-31-98 Derby Dome, Wyoming Oil.
4-31-98 Burnside Oil Co.
24-32-90 Myers Pet. 1.

Shut Down

5-32-94 SE¼ McLennin & Ketch.
15- 6- 2 Union of Cal. 13.
6- 6- 2 Sw¼ Union of Cal. 2.
21- 1- 1 Bridger Oil 1.
29-27-95 Fremont Pet.
18-27-95 Sage Creek Pet.
19-27-95 Brimmer, Prairie O. & G.
15-32-95 NE¼ Producers & Refiners 3.
Rigs, 0; wells drilling, 26; total, 26.

OSAGE

Rigs

31-47-63 L. B. Hanson.
31-47-63 West Royalty Oil Co.
Fawcet Ranch, Manlove et al.
31-46-63 Clark et al.
17-46-63 LaFleiche Oil.
19-46-63 Sinclair Wyo. Oil.
31-46-63 Lusk Royalty Oil Co.

Wells Drilling

10-45-61 Lenhart & Briggs.
17-47-63 Wyoming O. & G.
18-46-63 Fred Gravested.
11-46-64 Frederick Oil Co.
5-46-64 Fletcher Bros.
20-46-64 Byron-Gardner Co.
31-46-63 Tom Don Oil Co.
17-46-63 La Fleiche Oil.

Shut Down

6-46-63 Osage Trust Co.
31-45-63 Bachellor Oil Co.
8-45-63 Griffith Oil.
Rigs, 7; wells drilling, 11; total, 18.

NATRONA COUNTY

Wells Drilling

23-33-79 Carrol, H. Meabon et al.
25-36-85 NW¼ Midwest Refining Co. 18.
9-41-80 Newcomb et al.
Pine Mountain, Summit Oil Co.
11-32-82 New York Oil Co. 6.
30-29-87 Schnoor Dome, Kinney Coastal Oil 1.
12-36-82 Columbus Oil Co.
20-30-86 John Wyland et al.
7-36-81 Columbus Oil.
15-34-87 NE¼ Mutual Oil 1.
22-36-82 California Co.
36-37-82 SW¼ Midwest Refining Co. 1.
10-36-85 New York Oil.
9-35-85 New York Oil 4.
28-41-81 Midwest Refining Co. 1.
23-34-82 Bradford Wyoming.
7-36-81 Arkansas Nat. Gas Co.

Shut Down

31-40-80 Comet Syndicate.
5-39-80 Vernon Oil Co. 1.
Rigs, 0; wells drilling, 19; total, 19.

LINCOLN AND UINTAH COUNTIES

Rigs

3-27-113 Wyota O. & G.
3-26-113 Newlon Oil 3.
31-28-113 Tip Top Syndicate.
12-29-113 Clinton Oil Synd.

Wells Drilling

4-26-113 Transcontinental Oil.
34-27-113 Wyota O. & G.
32-19-116 G. C. Conger, Trustee.
22-21-117 SW¼ Three States Oil.
1-28-114 Midwest Refining Co.
3-26-112 Wyoming Reserve Oil Co.
3-26-113 Superior O. & G.

Shut Down

Afton District, Idaho Wyoming.
1-28-114 Chas. Lackey et al.
Rigs, 4; wells drilling, 9; total, 13.

BAXTER BASIN

Rigs

27-17-104 Montacal Oil Co.

Wells Drilling

13-117-104 Producers & Refiners 1.
2-17-104 NE¼ Midwest Refining Co. 1.
23-17-104 SE¼ Associated Oil Co.

Shut Down

8-16-104 Montacal Oil.
10-16-104 Midwest Refining Co. 6.
26-17-104 Associated Oil.
24-17-104 Montacal Oil.
10-16-104 SE¼ Midwest Refining Co. 29.
10-16-104 NW¼ Midwest Refining Co. 36.
25-18-104 Midwest Refining Co. 29.
30-18-104 Midwest Refining Co. 6-AX.
Rigs, 1; wells drilling, 11; total, 12.

MISCELLANEOUS

Wells Drilling

Lingle District, Forman et al.
23-27-93 Associated Oil.
21-31-79 Big Sioux Oil.
28-42-79 Seattle Synd. Oil Co.
20-21-80 Producers & Refiners 1.
16-21-80 Producers & Refiners 1.
26-27-61 Platte Wyoming Oil.
20-29-68 Nebraska Synd.
Guernsey District, Illinois Synd.
31-50-69 Rozet O. & G.
28-48-82 McL., Carter Oil Co.
16-48-82 Bell, Carter Oil Co.
21-48-82 Graham, Carter Oil Co.
Burris Dome, Montana Giant Oil.
Buffalo District, Kinney Coastal Oil.

Shut Down

17-48-82 Hess, Carter Oil Co.
18-39-68 Glendo O. & G.
Rigs, 0; wells drilling, 17; total, 17.

MONTANA

CAT CREEK

Rigs

12-15-28 NE¼ Shaffer Oil Co.

Wells Drilling

12-15-28 California Co. 7.
31-15-30 Michael Mahler et al.
8-15-29 Mutual Oil.
12-15-29 Catlet, Mid-Northern Oil.
9-15-27 Peerless Oil 2.
23-14-28 Winnet Pacific Oil.
1-15-29 Custer O. & G.
28-16-28 Republic, Peerless Oil Co.
9-15-29 NE¼ Frantz Corp.
7-15-29 NW¼ T. S. Hogan.
9-15-29 Mid-Northern Oil.
29-14-29 Flatwillow Oil.
27-15-27 Frantz Corp.

Shut Down

10-15-29 Fifty Six Pet.
22-15-30 A. D. Miller et al.
11-15-20 Helena Cat Creek Oil.
8-15-29 Logan Corp.
15-15-30 Swartz et al.
11-15-30 Miles City Oil.
Rigs, 1; wells drilling, 19; total, 20.

KEVIN SUNBURST

Rigs

25-35- 2 Stannard, Beaver Montana 2.
30-35- 1 Stannard, Wallace Oil 2.
11-35- 3 Stockmen's Bank, Ohio Oil 2.
20-35- 2 Whitman, Homestake Explo.
30-35- 2 Hecla Oil Co.
7-32- 2 Mutual Oil.
20-32- 2 Crumley McKnight.

Wells Drilling

4-34- 2 Norem, Becket Bros. 2.
4-32- 2 Storm, Shoshoni Oil 7.
29-35- 1 Bluhm, Elliot Collander 2.
1-34- 2 Lewis, Lilly et al 1.
8-34- 2 Herley, Claresholm Oil Co.
2-34- 2 Steel, Big West Oil 2.
32-35- 1 Schuster, Adams-Oil Co.
29-35- 1 Maughan, Sweeny Oil 2.
24-35- 2 Byrene, Oil Prod. Synd. 1.
4-34- 2 Corey, Johnson Oil Synd.
24-35- 3 Fryberger, Western Drilling Co.
4-34- 2 Corey, Sunburst Whitman Synd. 2.
4-34- 2 Corey, Crumley McKnight 6.
16-33- 1 State, Mutual Oil 1.
5-34- 2 Sweny, Seattle Foster 2.
27-35- 2 Moffat Synd. 2.
29-35- 1 Anderson, Sylvester Oil 3.
32- 6- 2 Roundsley, Sunburst O. & G.
22-35- 2 Newman, California Co. 3.
21-34- 1 Stockmen's Bank, Potiatch O. & G.
24-33- 1 Shelby Synd. 3.
28-37- 2 McAlphin, Spartan Oil 1.
20-35- 2 Halter, Sunburst Prod. 2.
7-34- 1 Harte, Russel Oil et al.
18-34- 1 Skinner, Creel et al.
34-35- 1 Jerring, First International.
32-35- 1 Putnam, Keystone Oil Co.

Shut Down

31-37- 1 Beaupre Oil Co.
20-33- 1 Bailey, Flood Watson.
23-33- 1 Webb, Shelby O. & G.
2-35- 1 Skilton, Sweetgrass Arch 2.
12-34- 1 Peterson, Lucky Forty Oil.
13-33- 2 Campbell, Campbell Synd. 5.
16-34- 2 NW¼ Rainbow Oil.
1-34- 2 NE¼ Sunburst O. & G.
Rigs, 7; wells drilling, 36; total, 42.

MISCELLANEOUS

Rigs

Livingstone Dome, Whiteside et al.
Porcupine Dome, Stellar O. & G.
24-14-15 Fullerton Oil.
12-10-32 Hibbard Oil.
4-28-39 Mid-Northern Oil.
Coal Ridge, West Virginia Oil.

Wells Drilling

22- 2-25 Lake Basin Oil.
8- 4-23 NE¼ Hoosier Oil.
13- 1-21 Putnam, Mid-Northern Oil 1.
McAnnalley Ranch, Twenty - Dollar Bill Synd.
11- 1-29 NE¼ Absoraka Oil Dev.
23- 1-21 Price, Mid-Northern Oil 1.
23- 1-12 Keeler, Springdale Synd.
33-16-28 H. H. Swartz, Jr.
9-31-19 Deny, California Co.
14-14-25 Flatwillow, AMZ Synd.
28-16-27 Brush Creek Synd.
24- 5- 8 Potter Basin Oil.
28- 8-21 Absoraka Oil Dev.
18- 3-23 Securities Prod. Co.
34- 7-16 NE¼ California Co.
32-25-20 Butler O. & G.
24-20-12 Continental Prod.
17- 3-19 Snyder, Mid-Northern Oil 1.
4-17-20 California Co.
26- 1-21 Modrell 2, Mid-Northern Oil 2.
20-24- 1 C. A. McDonald et al.
4- 2-27 Mid-Northern Oil.
35- 1-21 Luce, Midwest Refining Co.
23- 2-21 Lindsay, Midwest Refining Co. 1.
10- 5-27 Byron Superior Oil.
20- 1-25 California-Absoraka Oil.

Shut Down

35-32-32 SW¼ Bowdoin Oil & Gas.
7-27- 7 NW¼ Circle Oil.
9-10-39 SE¼ Stellar O. & G.
5- 1-31 NE¼ Grimstead & Brown.
36- 7-16 SE¼ California Co.
5- 2-24 NE¼ Pennsylvania Kentucky Oil.
18-34- 2 Beck Pet.
18-24- 3 Cascade Oil.
2-28- 3 Dry Fork Oil.
26-10-39 Stellar O. & G.
32- 4-16 Consolidated O. & G.
13- 3-22 SE¼ Murray Bros. 3.
35- 7-13 Churchwell et al.
20-25- 5 Larsen, Walter Bright.
32-22- 3 Rees, Greater Great Falls Oil.
32-30- 2 Denzer, Drake Oil.
2-26- 6 Jones, Walter Bright.
13- 3-23 Securities Prod. 4.
9-11-24 NW¼ Absoraka Oil Dev.
21-14-28 Black Hawk Oil.
21-30- 2 Turner, Fergus O. & G.
22- 2-25 McMennamin et al.
18- 6-24 Minnemier & Newman.
3-12-25 Minnesota Flatwillow.
15-27- 7 Kelly, Empire Oil.
6-13-14 Fulton Oil.
26-14-20 NW¼ Jackson Dome Oil.
30-15-26 Winnet Shallow Oil Synd.
22-23-12 Hager Stevenson.
10-18- 2 Moscow Oil Co.
7-27- 7 Tri City Oil.
18-26-26 Walker Bros.
Devil's Basin, Alberta Block Coal Co.
35- 2- 7 Gladys Belle Oil.
Coalwood Dome, Annamay Oil Co.
Hailstone Basin, Hailstone Basin Oil.
Devil's Basin, Montana Central Oil.
Devil's Basin, Monarch Oil.
24- 5-17 Unit O. & G.
23- 3-23 Davis Creek Synd.
33- 5-28 Beauvois Oil.
12-11-13 Kalispell Synd.
6- 5-25 Grey Eagle Oil.
31-15-46 Crow Rock Oil.
2- 2-26 Clark's Fork Oil.
11- 1- 1 Ruby Ridge Oil.
Rigs, 6; wells drilling, 72; total, 78.

COLOBADO

Rigs

24- 5-92 SE¼ Standard of California.
30- 2-102 Midwest Refining Co.
20- 2-43 Mutual Oil 1.
1- 8-69 Morrell, Petroleum Prod. Corp.
17- 8-68 Fort Collins Chief Oil.
20- 2-46 General Oil Co. 1.
3- 2-44 Wrayfield Oil Corp.
29-10-68 American Pet.
12-38-70 Green Mt. Pet.
31- 9-68 Midway O. & G.
10- 2-70 NW¼ Mullin Synd.
27- 2-70 Rainbow O. & D. Co.
7- 9-68 Union of California.
19- 8-68 Myers, Union of California.
1- 9-69 Thimmig, Union of California.
28- 2-43 Strangway, Mutual Oil.

Wells Drilling

19- 8-68 Vernstratten, Union of California.
30- 8-68 Blunk, Union of California.
31-10-68 Buckeye, Union of California.
19- 5-69 Alps, Gateway Oil Co.
15-21-65 Union of California.
18-20-46 SW¼ Nee-No-She Oil.
30-27-45 NW¼ Lamar Oil.
5- 6-68 Majestic Oil.
2-32-12 Liedecker et al 2.
28- 2-70 Gehring, Haystack Oil.
17- 9-68 Meredith, Quaker Oil Co.
32-10-68 Hess, Union of California.
2- 8-69 Douglas Oil Co.
19- 9-68 Harwood, Great Northern Oil.
30- 3-69 McIntosh, Gnome O. & R.
13-12-77 C. F. & L., Ohio Oil 1.
34- 2-69 Johnson, Roland Oil 1.
19-16-48 Schultz, California Co.
11- 1-44 Hildreth, Hessick Drg. Co.
14-14-95 Mid-Colorado Oil.
13- 8-69 Centennial State Pet.
33- 8-69 Chandler, Flynn & Ache.
22- 1-69 Prince, Ohio Oil 1.
31- 2-69 NW¼ White River Dev. Co.
5- 1-43 Hessick Drilling Co.
8- 8-102 Smith, Sun Oil Co.
20- 8-97 Harrison Synd.
36-10-69 Union of California.
4-45-16 Gilmer Oil Co.
8- 9-68 Ketterman, Colorado Oil Prod.
32-10-68 SE¼ Imperial Oil.
4-32-66 Tulsa Oil Leasing Co.
9- 4-91 Meyers, Texas Prod. Co.
22- 4-89 Beaver Creek, Transcontinental Oil.
24- 4-93 Axil Basin, California Co.
31- 5-98 Morgan, Union of California.
16- 3-91 Marland Oil.
16- 5-94 State, Hogan Interests.
8- 4-67 Carter Oil.
7- 6-68 Texas Prod. Co.
25-21-64 Russler, Ohio Oil.
34-17-70 Mutual Oil Dev.
33- 5-91 NE¼ Texas Prod. Co.
9-12-62 Ullom, Roland Oil Co.
16- 4-69 State, Midwest Refining Co.
Pueblo District, Chico Basin O. & G.
23-31-66 Colodo Oil Co.
24- 9-69 SW¼ Wellington Oil Corp.
6- 9-68 Scott, Union of California.
36- 9-68 State, Union of California.
14- 4-92 Ahern, Yarg Prod. Co.
20- 1-93 Marland Oil Co.
30- 4-68 Panuco Explo.

Shut Down

23- 3-64 Eman Oil Co.
1-22-60 Jones Point Oil.
30-20-68 Eagle Rock Oil.
3-35-58 Las Animas Synd.
5-26-65 Moody Lake Oil.
15-21-64 Hail & Allen.
32-20-63 Salida Oil Ref. Co.
34- 5-91 Gentle Texas Prod.
33- 5-91 Hamilton, Texas Prod. 1.
8- 9-69 Warren, Union of California.
19- 5-69 Dry Creek O. & G.
34-33-12 J. A. Liedecker 1.
22-32-13 SW¼ Love et al.
35-22-60 San Carlos Oil.
16- 4-91 State, Texas Prod. Co.
28- 5-91 Freeman, Texas Prod. Co.
23- 5-91 Hamilton Salt Creek Co.
36- 5-99 State, Producers & Refiners.
Rigs, 16; wells drilling, 71; total, 87.

UTAH

Rigs

18-23-21 Metropole Oil.

Wells Drilling

30-20-22 Utah O. & R. 2.
10-22-21 Utah O. & R.
23-42-17 Monumental Oil.
Virgin Field, Gustaven Oil Co.
Roselle District, Lenora Mining & Milling Co.
Roselle District, Lakeside Oil Co.
34-25-21 Big Six Oil.
22- 3-24 SW¼ Producers & Refiners 1.
16- 2- 5 State, Western Empire Oil.
23-42-17 Monroe Oil.
27-41-97 Glocker, Utah Southern Oil 1.
Crescent Dome, Crescent Eagle Oil.
Diamond Fork, Gustaven Oil Co.
31-32-18 Union Oil of Utah.

Shut Down

12-19-13 Utah O. & R.
17- 4- 6 Utah Southern & Ute Pet.
13-14- 9 Castledale Oil.
27-16- 4 Producer Oil.
Lakeside Dome, W. R. Holmes.
Diamond Fork, Franco Utah Oil.
25-13- 3 Cache Valley Oil.
2-17- 3 Utah Central Oil.
Harrisburg Dome, Virgin Oil Co.
Evans Claim, Uintah Oil Co.
Hill Creek, Hill Creek O. & R
Hill Creek, Mutual Oil.
Rigs, 2; wells drilling, 26; total, 28.

NEW MEXICO

Rigs

15-23-24 Florsheim Oil Co.
5-30-13 H. L. Williams.

Wells Drilling

23-31-18 Vermejo, Union of California.
22-18-27 NW¼ Oscar Steward.
20-32-13 H. L. Williams 3.
34-21-26 Tracy, Ohio Oil 1.
17-21-13 H. L. Williams 4.
8-30-13 H. L. Williams 5.
23-23-13 Roy T. Clapp.
23-23-11 Bisti Oil Co.
Ute Dome, J A Liedecker
31-32-13 Four States Oil
16-30-11 Aztec Oil Synd.
34-30-11 R. A. Carter et al.
4-18-28 SW¼ New State Oil.
29-17-27 Brainerd, Welch et al.
15-29-11 Bloomfield O. & G.
16-32-14 Gypsy Oil Co.
6-29- 9 Pool Stacy Synd.
13-29-16 Sante Fe Mutual Synd.

Shut Down

6-14-13 San Juan Dev. Co.
12-29-13 Shiprock Oil Co.
25-39-12 Hall et al.
14-29-11 Hubble & Hall.
Rigs, 2; wells drilling, 22; total, 24.

WELLS COMPLETED

WYOMING

23-40-79 SE¼ Wyoming Oil Fields 22-A 390
26-40-79 NW¼ Wyoming Asso. 15-A.... 60
26-40-79 SE¼ Wyoming Asso. 19-AX.... 75
30-40-78 SW¼ Wyoming Asso. 12-A.... 50
23-40-79 SW¼ Wyoming Asso. 29-A.... 49
2-39-79 NE¼ Wyoming Asso. 29-A.... 340
26-40-79 SE¼ Wyoming Asso. 23-A.... 75
34-40-79 SE¼ Wyoming Asso. 16-A.... 202
35-40-79 NW¼ Wyoming Asso. 24-A.... 36
24-40-79 NW¼ Wyoming Asso. 11-A.... 45
30-40-78 SE¼ Wyoming Asso. 31-A.... 50
35-40-79 NW¼ Wyoming Asso. 15-A.... 45
34-40-79 SE¼ Wyoming Asso. 15-A.... 140
31-40-78 NW¼ Salt Creek Cons. 4-A... 100
31-40-78 NE¼ Salt Creek Cons. 33-A... 15
11-40-79 NE¼ Mountain & Gulf 33-A.. 30
6-39-78 NW¼ Mountain & Gulf 29-A.. 100
13-40-79 SE¼ Mountain & Gulf 16-A.. 120
13-40-79 SE¼ Mountain & Gulf 13-A.. 60
12-40-79 SE¼ Mountain & Gulf 34-A.. 60
13-40-79 SE¼ Mountain & Gulf 2-A.. 60
26-40-79 SE¼ Midwest Oil 8-A..... 60
14-40-79 SE¼ Midwest Oil 3-A..... 130
22-40-79 NE¼ Midwest Oil 2-A..... 51
35-40-79 SW¼ Midwest Oil 12-A..... 61
25-40-79 SW¼ Midwest Oil 6-A..... 165
23-40-79 NW¼ Midwest Oil 29-A..... 160
35-40-79 NE¼ Midwest Oil 18-A..... 325
14-40-79 NW¼ Midwest Oil 3-A..... 171
34-40-79 NE¼ Midwest Oil 13-A..... 225
11-40-79 SW¼ Midwest Oil 34-A..... 110
2-39-79 NW¼ Midwest Oil 26-A..... 200
12-40-79 SW¼ Midwest-Wyoming Asso. 24-A 75
6-39-78 SE¼ Producers & Ref. 5..... 165
8-39-78 SW¼ Producers & Ref. 3..... 70
14-39-79 NE E. T. Williams S-7..... 95
18-40 78 SW¼ Continental W-8 165
18-40-78 SW¼ Continental Prod. W-9.. 160
19-40-78 SE¼ Continental Prod. N-8... 200
30-40 78 NE¼ Continental Prod. B-11.. 160
5-39-78 NW¼ Carter Oil D-8 ..... dry
5-39-78 NW¼ Carter Oil D-15 ..... dry
32-40-78 SW¼ Mutual Oil 25-A 160
12-40-79 NE¼ Empire State Oil 19-A.. 250
35-40-78 NE¼ Midwest Oil 21-A 200
11-40-79 SW¼ Midwest Oil 13-A 202
27-40-79 Columbia, Ohio Oil 12 75
14-40-79 SE¼ Wyoming Asso. 27-A 175
30-58-99 Elk, Midwest Ref. 17 10
2-26-90 Utah O. & R. 1-A ..... dry
32-26-87 General Pet. ..... gas
25-26-87 SW¼ Producers & Ref. 19.... 35
11-26-90 Bair Oil 27-A 100
22-26-98 Producers & Refiners ..... dry
25-21-79 Southwestern Pet. ..... dry
21- 3- 1 Norris, Marine Oil 3 ..... dry
35-35-84 White River Lumber Co. ..... dry

Wells completed 17
Production 6450
Dry 6
Gas 1

MONTANA

33-35- 2 Norem, Ohio Oil 1 825
32-32- 1 Putnam, Kewanee Oil Co. 10
30-35- 1 Anderson, Ferdig et al 2 15
9-35- 2 Howling, Mid-Northern Oil 6 .. 12
9-35- 2 Howling, Homestake Oil 4 120
5-34- 2 Sweeny, Seattle Foster 2 60
25-35- 1 Anderson, Red Deer Oil 3 72
30-35- 1 Stannard, Tri State Oil 50
25-35- 2 Stewart, Campbell Rhinesmith. 75
8-35- 2 McGowan, Montana Giant 2.... 35
32-34- 2 Murrills, Fifty Six Pet. ..... dry
31-35- 2 Allen, Big West Oil 3 100
18-35- 1 Gauze, Frazier et al ..... dry

Wells completed 13
Production 1357
Dry 2

UTAH

6- 2- 6 Coalville, Ohio Oil 1 ..... dry

Wells completed 1
Production 6
Dry 1

NEW MEXICO

32-18-28 Illinois Co. 4 45
32-18-28 Illinois Co. 5 10
28-18-28 SW¼ Walker et al 25

Wells completed 1
Production 95

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	27	50	6	4
Bradford	92	218	2	1
Middle Field	1	1	6	6
Venango-Clarion	33	31	4	6
Butler-Armstrong	16	45	4	1
Southwest Pennsylvania	15	77	7	1
West Virginia	90	247	16	44
Southeast Ohio	84	578	15	12
Total November	358	1,247	43	73
Total October	362	1,608	45	68
Difference	4	361	0	1

Summary of New Work

Fields—	Rigs	Drg.	Trl.
Allegany	17	17	34
Bradford	21	96	117
Middle Field	2	2	4
Venango-Clarion	0	18	18
Butler-Armstrong	8	17	25
Southwest Pennsylvania	18	41	59
West Virginia	82	135	217
Southeast Ohio	41	115	156
Total November 30	189	441	630
Total October 31	182	408	590
Difference	7	33	40

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED

WASHINGTON COUNTY

Lutton, Tague, Lutton & Co. 2..... 50
Elwood, Emerald Pet. Co. 1..... 1
Westfall, Kirby & Co. 3..... dry

ALLEGHENY COUNTY

Pahlman Heirs, American N. G. Co. 1.. 15
McKibban, Black Bros. & Co. 6..... 1
Wattenpool, Leidecker & Co. 1..... gas
Gillen, Smith & Co. 1 .....

BEAVER COUNTY

Hineman, Coulter & Cook 1 ..... dry
Shawhorn, H. K. Dev. Co. 1..... dry

GREENE COUNTY

Hughes, Boundy Bros. & Co. 1..... gas
Gardner, Mfrs. L. & H. Co. 1..... gas
Kennedy, Kennedy, Brook & Co. 1.... dry
Headley, Fox Oil & Gas Co. 1..... gas
Bryan, John Blair & Co. 1 ..... gas

WESTMORELAND COUNTY

Seger Brothers, Peoples Gas Co. 1..... dry

Wells completed 25
Production 27
Dry 1
Gas 3

WASHINGTON COUNTY

Rigs

Thompson, Brown & Conklin 1.
Munce, Tague, Lutton & Co. 1.
Mansfield, Tague, Lutton & Co. 2.
Thome, Robert Hayes & Co. 1.
Andrew, Mfrs. L. H. Co. 1.
Westfall, Kirby & Co. 4.

Wells Drilling
Day, Mfrs. L. & H. Co. 1.
Craft, N. G. Co. of W. Va. 2.
Raley, Carnegie Gas Co. 1.

ALLEGHENY COUNTY
Rigs
Woodside, So. P. O. Co. 5.
Wallace, Edwards & Co. 3.
McKinney, N. G. Williams 2.
Swiger, Walley & Hahn 2.
Lutzinger, B. Lutzinger & Co. 1.
Wells Drilling
Hartung, J. S. Walley Co. 1.
Heck, M. M. Walley & Co. 2.
Peabody Heirs, Walley & Hahn 1.
Allen, Hahn & Co. 1.
Musgrove, McCormick & Co. 2.
Lacolla, Charles Wachter 1.
Gillen Heirs, Smith & Co. 1.
Clever, M. Clever 1.
Bond, Hurley & Co. 1.

BEAVER COUNTY
Wells Drilling
Spence Heirs, H. L. Stettler & Co. 4.
Peters Heirs, A. S. Lynn 2.
McDonald, J. L. Mills 1.
Shane, Butler Parties 1.

GREENE COUNTY
Rigs
Stephens, Philadelphia Co. 2.
Henderson, Carnegie Gas Co. 2.
Lemley, Peoples Gas Co. 2.
Howard, Peoples Gas Co. 1.
Webster, Mfrs. L. & H. Co. 1.
McCaslin, Caseman O. & G. Co. 1.
Shoup, Carnegie Gas Co. 1.
Wells Drilling
South, Fred Garrison 1.
Headley Heirs, Fox O. & G. Co. 1.
Lemley, Carnegie Gas Co. 2.
S. H. Lemley, K. B. O. & G. Co. 1.
Bonner, So. P. O. Co. 2.
Fox, Peoples Gas Co. 1.
Patterson, Davis O. & G. Co. 2.
Patterson, Moore-Tex Oil Co. 1.
Kent, Peoples Gas Co. 1.
Phillips, Peoples Gas Co. 2.
Cumberlege, H. D. Freeland & Co. 1.
Chew, Mfrs. L. & H. Co. 1.
Webster, Carnegie Gas Co. 1.
McCracken, Orndoff & Co. 1.
Stypes, Enterprise O. & G. Co. 1.
Gump Heirs, N. Freeport O. & G. Co. 1.
Sellers, James Null & Co. 1.
Lemley, Randolph O. & G. Co. 2.
Brown, Brown O. & G. Co. 4.
Boyd, Mfrs. L. & H. Co. 1.
McGrevy, Waynesburg Prod. Co. 2.
Markey, Greensboro Gas Co. 1.
Martin, Carnegie Gas Co. 1.
Baldwin, C. T. Sutton & Co. 1.

WESTMORELAND COUNTY
Wells Drilling
Booth-Flinn, Peoples Gas Co. 2.
Rigs, 18; wells drilling, 41; total, 59.

SOUTHEASTERN OHIO
WELLS COMPLETED

MONROE COUNTY
Mullinex, Savage & Co. 2..... gas
McCaslin, Carter Oil Co. 1..... gas
Hartshorn, Berea O. & G. Co. 2..... dry
Haught, Thornsberry & Lucas 1..... dry
Cox, T. L. Covert & Co. 4..... 3

PERRY COUNTY
Sunday Creek Coal Co., O'Connor & Keller 18..... 5
Trout, Midland Oil Co. 1..... dry
Irvin, Tague Oil Co. 1..... dry
Calkins, Calkins O. & G. Co. 4..... 1

HOCKING COUNTY
H. V. P. Co., Chartiers Oil Co. 191.... 50

COSHOCTON COUNTY
Dugan, Ark. Fuel Oil Co. 9..... 3

LICKING COUNTY
Bowers, Tague & Zanhizer 2..... 10
Swinehart, Central Ohio G. Co. 1..... dry
Johnson, O. F. S. Co. 1..... gas
Mercer, Carter Oil Co. 1..... 50
Stair, E. J. Edmonds & Co. 2..... 3
McKinney, Jones & Reese 5..... 2
Smith, Ralph Bros. 4..... 4
Rector, O. F. S. Co. 1..... 1
Stephens, Moore & Adams 5..... 3
Guthridge, Bishop & Patton 2..... 4
Montgomery, W. W. & A. T. Wehrle 1.. 5
Darnes, W. W. & A. T. Wehrle 7..... 2

KNOX COUNTY
Bebout, Snider & Carson 20..... 2
Bebout, Snider & Carson 21..... 2
Harris, F. Marion Snyder 9..... 2
Wolfe, A. H. Heisey & Co. 1..... 1
Scholes, East Ohio P. & R. Co. 6..... 3

HOLMES COUNTY
Kendall, East Ohio G. Co. 1..... 30
Allison, Central Ohio Gas Co. 1..... gas
S. V. Allison, Central Ohio Gas Co. 1.. dry
Lepple, Central Ohio Gas Co. 1..... gas
Davenport, Central Ohio Gas Co. 1..... gas
Korns, Central Ohio Gas Co. 2..... 10
Barnes, Ohio Fuel Gas Co. 1..... gas
Sterling, East Ohio G. Co. 1..... 25
Mast, East Ohio G. Co. 1..... gas

FAIRFIELD COUNTY
Graffis Heirs, Ruff, Star & Co. 1..... gas
Morrow, Sturm & Co. 1..... 40
Combs, Packard O. & G. Co. 1..... gas

MEIGS COUNTY
Spencer, Pure Oil Co. 1..... 8
Holter, Jupiter Oil Co. 2..... gas

ATHENS COUNTY
Whaley, W. J. Seepry, trustee, 5..... 20
Braley, Edmondson & Co. 1..... dry
Bedford, Gross & Co. 3..... 15
Wellfrom, Home Oil Co. 1..... dry
Hollington, Rauch O. & G. Co. 2..... 10
Smoot, Townsend O. & G. Co. 4..... 10
Earhart, Watkins O. & G. Co. 1..... gas
McClain, Jones & Carpenter 1..... dry

NOBLE COUNTY
Coal Lands, O. O. Kinsey & Co. 4..... 1
Morcand, H. H. Mosley & Co. 3..... dry
Nau, H. A. Hendershot & Co. 10..... 3
Kirk, John Kemp & Co. 1..... 2
McWilliams, John Kemp & Co. 4..... dry
McWilliams, John Kemp Co. 5..... dry
Headdleson, E. A. Metcalf & Co. 6..... 2
Pryor, W. L. Clark & Co. 1..... dry
Hupp, Dinsmoor Est. 1..... dry

MORGAN COUNTY
Bailey, Sun Oil Co. 6..... 125
Souders, Sun Oil Co. 1..... 20
Epply, Pure Oil Co. 2..... 30
Frye, Pure Oil Co. 2..... 25
Smith, Pure Oil Co. 1..... 30
Smith, Pure Oil Co. 2..... 25
Cunningham, Swingle O. & G. Co. 1.... 3

WASHINGTON COUNTY
Uppole, F. Goddard & Co. 1..... 1
Heslop, Beeson Bailey & Co. 6..... 10
Duvol Bros., John Ryan & Co. 3..... 5
Wagner, G. W. Wagner & Co. 3..... 2
Hadley, Crescent Prod. Co. 8..... 2
Thornily, Victor Hammen 2..... 1
Haas, Reynolds & Co. 4..... 1
Wagner, Flack & Co. 2..... 1
Martens, S. J. Bogard & Co. 1..... dry
Wenzel, J. W. Rothley & Co. 3..... dry
Reed, E. H. West & Co. 2..... dry

BELMONT COUNTY
Henderson, Dysart-Mitchell O. & G. Co. 3..... 5
Adams, Westgate Est. 12..... 5

CARROLL COUNTY
Davis, Amsterdam parties 1..... dry

COLUMBIANA COUNTY
Shively, Cameron & Co. 1..... 1
Shively, Cameron & Co. 2..... 1
Shively, Cameron & Co. 3..... 1
Yaggi Heirs, Kirk & Dunn Oil Co. 12.. 2

Wells completed 84
Production 578
Dry 18
Gas 59

MONROE COUNTY
Wells Drilling
English, Carter Oil Co. 1.
Hall, Simmons Oil Co. 2.
Bode, H. L. Timblin 10.
McNeice, Cal. Corp. 2.

PERRY COUNTY
Rigs
Acker Heirs, Carter Oil Co. 2.
Skinner, Carter Oil Co. 1.
Paxton, Holliday Oil Co. 3.
Welch, Southern Oil Co. 2.
Greene, Carter Oil Co. 1.
Wells Drilling
Sunday Creek C. Co., John Denman & Son 45.
Sunday Creek C. Co., Sunday Creek Co. Co. 120, 121.
Acker Heirs, Murray City O. & G. Co. 4.
Moore, Atha Oil Co. 1.
Wilkens, Atha Oil Co. 1.
Trout, Atha Oil Co. 1.
Detrey, Reagan Oil Co. 2.

HOCKING COUNTY
Rigs
Ford, Gordon Oil Co 5.
Souders, Cedar F. O. & R. Co. 1.
Johnston, Griffin Prod. Co. 6.
Geiger, Midwest O. & G. Co. 1.
Jacobs, Jacobs Oil Co. 4.
Imler, O. F. S. Co. 1
Wells Drilling
Todd, Preston Oil Co. 2.
H. V. P. Co., Chartiers Oil Co. 192.
Tracey Estate, Kachelmacher Est. 14.
Sunday Creek Coal Co., Sunday Creek Coal Co. 122.
Chute Heirs, Red Top O. & G. Co. 6.
Cramblet, Preston Oil Co. 1.

COSHOCTON COUNTY
Rigs
Wolford, Spindler & Co. 4.
McKee, Spindler & Co. 4.
Ashcraft, Pure Oil Co. 3.
Crawford, Pure Oil Co. 7.
Wells Drilling
Moore, Carter Oil Co. 1.
Seward, Pure Oil Co. 2.
Veatch, Cline & Co. 3.

LICKING COUNTY
Rigs
Bowers, Glenn, Tague & Co. 3.
Cooperrider, Midland Oil Co. 2.
Bell, Carter Oil Co. 1.
Tish, Carter Oil Co. 1.
Derflinger, M. F. Whitehill & Co. 1.
Weiss, F. M. Rurg & Co. 3.
Wells Drilling
Cooperrider, Central Ohio Gas Co. 3.
Romine, Carter Oil Co. 3.
Morrison, Spindler & Donaldson 1.
Stevens, Moore & Adams 6.
Motherspaw, C. E. Saltzgaber & Son 7.
Romine, E. H. Everett Co. 1.
Crawford, M. F. Whitehill & Co. 1.
Wehrle, Wehrle Bros. 2.
Taylor, Wehrle Bros. 7.
Smith Bros., Wehrle Bros. 3.
Parr, Wehrle Bros. 6.
McClelland, Wehrle Bros. 3.
Ritchey, Wehrle Bros. 1.
Youse, Wehrle Bros. 1.
Hughes, E. J. Edmonds & Co. 4.
McKinney, Jones & Reese 6.
Patton, E. H. Everett Co. 1.

KNOX COUNTY
Wells Drilling
Scholes, East Ohio Prod. & R. Co. 2.

HOLMES COUNTY
Rigs
Herman, Carter Oil Co. 1.
Purdy, Pure Oil Co. 1.
Miller, Pure Oil Co. 2.
Davenport, Central O. G. Co. 1.
Smith, Central O. G. Co. 2.
Parsons, Rocky River Dev. Co. 3.
Barnes, Ohio F. S. Co. 4.
Uhl, Ohio F. S. Co. 2.
Harford, Ohio F. S. Co. 1.
J. Uhl, East Ohio G. Co. 3, 4.
Bell, East Ohio G. Co. 1.
Troyer, Central O. Gas Co. 1.
Carpenter, Pure Oil Co. 1.
Wells Drilling
Jackson, Carter Oil Co. 1.
Shanks, East Ohio G. Co. 2, 3.
Bird, East Ohio Gas Co. 2.
Church Lot, East Ohio G. Co. 1.
Mackey, East Ohio G. Co. 1.
Lowe, East Ohio G. Co. 2.
Bell, Central Ohio G. Co. 2.
Finney, Central Ohio G. Co. 1.
Smith, Central Ohio G. Co. 1.
Markey, Burtner & Co. 3.
Jarvis, Rocky River Dev. Co. 4
Barnes, Clice & Co. 2.
Martin, Clice & Co. 1.
Barnes, Clice & Co. 1.
Barnes, O. F. S. Co, 3.
Uhl, O. F. S. Co. 1.
Korns, O. F. S. Co. 2.
Sterling, East Ohio G. Co. 2.
Abbott, Ohio F. S. Co. 1.

GUERNSEY COUNTY
Wells Drilling
Cornelius, Ohio F. S. Co. 1.
Mackley, Ohio F. S. Co. 1.
Worthing, Ohio F. S. Co. 1.
Snell, Ohio F. S. Co. 1.
Williams, Ohio F. S. Co. 1.
Mercer, Ohio Oil Co. 1.
Bainter, Leonard O. & G. Co. 1.

FAIRFIELD COUNTY
Rigs
Moyer, Montana O. & G. Co. 1.
Wells Drilling
Everett, Nypenno Oil Co. 1.
Kagay, Overland O. & G. Co. 4.
Smith, Pure Oil Co. 1.

MEIGS COUNTY
Wells Drilling
Roush, E. W. Eagler 1.
D. Roush, Brocalsia Chem. Co. 1.
Cross, R. G. Gillespie 3.
Crew, Ohio F. S. Co. 1.

ATHENS COUNTY
Wells Drilling
Hefford, Gross & Co. 1.
Murphy, Southern Oil Co. 2.
Holsington, Rauch O. & G. Co. 2.
Gondl, Pure Oil Co. 1.
Smoot, Townsend O. & G. Co. 5.
Earhart, Watkins O. & G. Co. 2.
Hefford, Fisher O. & G. Co. 1.
Dresser, Cook O. & G. Co. 1.
Sherlock, Sherlock & Cormett 1.

NOBLE COUNTY
Wells Drilling
Walters, Washn. & Noble O. & G. 1.
Haskins, Wm. Patton & Co. 2.
Westcott, Earl Stephens & Co. 1.
Murray, C. D. Harper & Co. 1.
Harper, Cain-Duvol Oil Co. 1.
Love, E. A. Metcalf & Co. 4.
Shafer, Robinson & Metcalf 3.

MORGAN COUNTY
Rigs
Swytzer, Sun Oil Co. 5.
Findley, Carter Oil Co. 2.
Dutro, Carter Oil Co. 2.
Wells Drilling
Souders, Sun Oil Co. 2.
Fye, Pure Oil Co. 3.
Barringer, Pure Oil Co. 9.
Nelcewanner, Pure Oil Co. 2.

WASHINGTON COUNTY
Rigs
Herlan-Mendenhall, First Nat. Bank 32.
Wells Drilling
Matheny, Brown Bros. & Co. 2.
Valentine Heirs, Valentine Oil Co. 7.
McAtee, Dennis & Co. 1.
Martin, Braden Oil Co. & Dupey Bros. 1.
Rake, Peoples B. & T. Co. 15.
Dye, F. H. Rice & Co. 4.
Barth, Otto Becker & Co. 1.
Troutner, Earl Stephens 2.
Yost, Harris Co. 2.
Dye, E. W. Thornily & Co. 4.
Wagner, C. B. Lutton & Co. 3.
Schram, Hope Oil Co. 2.
Worthington, Metcalf & Co. 3.
Weimer, E. Thornily & Co. 4.
Gross, Waxley & Metcalf 6.
Wolford, Meister & Co. 11.
Hull, H. C. Turner 8.
Driscoll, J. T. Dillon Co. 32.

JEFFERSON COUNTY
Rigs
Groves, Boyer & Boyer 2.

BELMONT COUNTY
Wells Drilling
Poulton, C. W. Poulton & Co. 1.
Durigg, N. G. Co. of W. Va. 1.

CARROLL COUNTY
Wells Drilling
Blackledge, N. G. Co. of W. Va. 1.
Warner Heirs, Miller, Lees O. & G. Co. 2.

COLUMBIANA COUNTY
Wells Drilling
Stoffer, Coraopolis S. & T. Co.
Rigs, 41; wells drilling, 115; total, 156.

SUMMARY OF COMPLETED WORK
November 30, 1924.

Fields	Comp.	Prod.	Dry	Gas
Southwest Penn....	15	77	5	5
West Virginia.....	90	247	16	44
Southeast Ohio....	84	578	18	12
Total	189	852	39	61
Total, October..	193	1,273	36	60
Difference	4	421	3	1

Rigs and Wells Drilling

	Rigs	Dry	Total
Southwest Penn	18	41	59
West Virginia	82	135	217
Southeast Ohio	41	115	156
Total	141	291	432
Total, October	128	273	401
Difference	13	18	31

WEST VIRGINIA
WELLS COMPLETED

HARRISON COUNTY
Lanham, Garrett, Lyons & Co. 1..... gas
Stout, N. W. Pet. Co. 1..... gas
Sullivan, Hope C. & R. Co. 1..... 10
Smith, West Co. C. Gas Co. 1..... 1
Lewis, Vesper O. & G. Co. 1..... gas

MARION COUNTY
Morgan, Carnegie Gas Co. 2..... gas
Cannon Heirs, Martin O. & G. Co. 2.... gas
Keefover, W. Va. Utilities Co. 1..... gas
Michael, Owens B. & M. Co. 1..... gas
Rider, Hope Gas Co. 2..... gas
Stattler, Moore-Tex Oil Co. 1..... 5

WETZEL AND TYLER COUNTIES
Littel, Johns Gas Co. 2..... 75
McIntyre, Hope C. & R. Co. 1..... 20
Wade, Silver Hills Oil Co. 2..... 10
Tracey, Cooke Pet. Co. 1..... gas
Morgan, So. P. O. Co. 15..... 15
Batson, So. P. O. Co. 4..... gas
Thorne, Morgan Bros. & Co. 2..... gas

MARSHALL COUNTY
Howard Heirs, Mfrs. L. & H. Co. 2..... gas
Strickland, Cameron L. & H. Co. 1.... gas
McConaughey, Mfrs. L. & H. Co. 1..... gas
Riley Heirs, Wasmuth & Callehan 1.... 10

DODDRIDGE COUNTY
Williams, Carter Oil Co. 1..... 5
Ash Heirs, Carter Oil Co. 1..... 5
Williams, Hope Gas Co. 5..... gas
Maxwell, Columbia Carbon Co. 54..... dry
Smith, Carter Oil Co. 1..... gas
Smith, Hope Gas Co. 2..... gas

RITCHIE COUNTY
Taylor Heirs, Phila. Oil Co. 1..... gas
Richards, Carnegie Gas Co. 1..... gas
Morrison, Donaldson & Co. 1..... gas
W. Va. Tract, Cold Test O. Co. 14..... 1
West Virginia Tract, R. G. Wiles 5..... 3
Haymond Heirs, Premier Glass Co. 4.. dry
Jones, Carnegie Gas Co. 1..... gas
Markle, Carnegie Gas Co. 1..... dry
Golden, Hope Gas Co. 1..... 3
R. M. Tract, Cairo Oil Co. 19..... dry
Wilson, Hope Gas Co. 1..... dry
Flesher, Hope Gas Co. 1..... dry
Scott, Hope Gas Co. 1..... gas
Campbell, Hope Gas Co. 1..... gas
Rossin, Reno Oil Co. 2..... 2

GILMER COUNTY
Bennett Heirs, Hope Gas Co. 1..... 1
Ward, Hope Gas Co. 1..... 1
Gainer, Hope C. & R. Co. 5..... 5
Hardman, Hope C. & R. Co. 6..... 5
Law, Pgh. & West Va. Gas Co. 1..... dry
Rothwell, G. L. Cabot 1..... dry
Osborne, Hope Gas Co. 1..... gas

BRAXTON COUNTY
Bender, W. Va. Central Gas Co. 1..... dry
Bender, W. Va. Central Gas Co. 2..... dry

WIRT COUNTY
Donoha, W. C. Patterson 19..... 4

WOOD COUNTY
Griffin, C. S. Smith & Co. 1..... 1
Ingham, H. K. Kiffer 17..... dry
Kennedy, Daniel Kelly 15..... dry
Vincent, Rexroad & Rogers 1..... dry
Bush, J. L. West & Co. 1..... dry
West, Big Sand Oil Co. 1..... dry
Hebrank-Rapp, Hinds Peevy 2..... 5

PLEASANTS COUNTY
Colvin, Friendly O. & G. Co. 1..... 3
Wagner, Manon Oil Co. 8..... 5
Roberts Bros., G. F. Roberts 2..... 5
Hammett Heirs, Faith O. & G. Co. 1.. 3
Cokley Est., Johnson Oil Co. 1..... 1
White, F. D. Meister 16..... 3
Hashman, Bailey Gas Co. 1..... dry
Knight, Knight Farm Oil Co. 4..... 5
Severns, Marple & Carpenter 1..... 3

CALHOUN COUNTY
Stump, Hope Gas Co. 1..... gas

LINCOLN COUNTY
Miles, Carter Oil Co. 1..... gas
Adkins, Columbia Gas Co. 1..... gas
Osborne, Starr O. & G Co. 2..... gas
Sweetland, L. R. Sweetland 1..... gas
Asher, Foote O. & G. Co. 1..... gas

PUTNAM COUNTY
Wheeler, Henderson Dev. Co. 1..... gas

CABELL COUNTY
Schaub, Commercial Gas Co. 1..... gas
Vance, Midway City Gas Co. 2..... gas

BOONE COUNTY
Pryor-Allen, Owens B. & M. Co. 8..... gas
Perry, Owens B. & M. Co. 1..... gas
L. R. & P. Tract, Pure Oil Co. 24..... 20

KANAWHA COUNTY
G. K. P. C. & L. Tract, Owens B. & M. Co. 19..... gas
Robson-Prichard, U. F. G. Co. 1..... gas
Jarrett, U. F. G. Co. 1..... gas
England, U. F. G. Co. 1..... gas
Osborne, U. F. G. Co. 2..... gas
Withrow, U. F. G. Co. 1..... gas
Vickers, Columbia Carbon Co. 2..... gas

MINGO COUNTY
Neighbert Est., Public Gas Corp. 2.... gas
Logan C. C. Co., Public Gas Corp. 12 gas

Wells completed 90
Production 247
Dry 16
Gas 44

LEWIS COUNTY
Rigs
Snyder, Hope Gas Co. 3.
Wells Drilling
Bond, White Oak O. & G. Co. 1.
Ward, Hope Gas Co. 1.
Coffindaffer, Hope Gas Co. 2.
Hammer, Crystal O. G. Co. 1.
Wilson, Pgh. & W. Va. G. Co. 2.
Brown, Carnegie Gas Co. 2.

HARRISON COUNTY
Rigs
Bailey, J. W. Johnson & Son 1.
Griffin, Hope Gas Co. 1.
Chieftain Coal Co., Clarksburg L. & H. Co. 1.
Goodwin, So. P. O. Co. 10.
Lyons, Wolf Pen O. & G. Co. 2.
Smith Bros., Hope Gas Co. 1.
Blair, Grassilla Chem. Co. 1.
Wells Drilling
Bramer, Clarksburg L. & H. Co. 1.
Smith Heirs, Hope Gas Co. 1.

PRESTON COUNTY
Wells Drilling
Gordon, Hope Gas Co. 1.

MARION COUNTY
Rigs
Davis, Hope Gas Co. 1.
Fluharty, So. P. O. Co. 2.
Hays, Hope C. & R. Co. 6.
Wells Drilling
Fleming, Davenport O. & G. Co. 1.
Goodnight, Owens B. & M. Co. 1.
McDeffit Heirs, Mfrs. L. & H. Co. 2.
Cunningham, Owens B. & M. Co. 1.
Brock, Owens B. & M. Co. 1.
Conoway, Owens B. & M. Co. 1.
Fleming Heirs, Morgantown Oil Co. 1.
Murray, Carnegie Gas Co. 3.
Rowand, R. S. Monroe & Co. 1.
Metz, S. N. Elliott 1.

MONONGALIA COUNTY
Rigs
Knutti, Cummins & Thomas 1.
Wells Drilling
Tennant, So. P. O. Co. 5.
Varner Heirs, Dunn-Marr O. & G. Co. 17.
Tennant, Clay Dist. O. Co. 1.
Cowell, Carnegie Gas Co. 1.

WETZEL & TYLER COUNTIES
Rigs
Antill, Johns Gas Co. 5.
Eddy, McIntyre Bros. 1.
Chaney, Mfrs. L. & H. Co. 1.

Goddard, Hope C. & R. Co. 1.
Lemasters, Hope C. & R. Co. 1.
Allen, Hope C. & R. Co. 1.
Hixenbaugh Heirs, Mfrs. L. & H. Co.
Stewart, Helfrick & Co. 1.
Hamilton, Carter Oil Co. 3.

Wells Drilling

Orndoff, Littleton Gas Co. 1.
Beeher, Hope C. & R. Co. 1.
Morgan, Gordon Oil Co. 1.
Ingram, Hope C. & R. Co. 1.
Morgan-Henderson, Little Flower Oil Co. 2.
Bartrug, Mfrs. L. & H. Co. 3.
Stewart, Neeley Oil Co. 1.
Hess, So. P. O. Co. 1.
Miller, Hope C. & R. Co. 1.

MARSHALL COUNTY

Rigs

Riley Heirs,, Wasmuth-Callahan Co. 2.
Keller, Mfrs. L. & H. Co. 4.
Calvert, Mfrs. L. & H. Co. 1.
Marshall, Mfrs. L. & H. Co. 11.
Burley Heirs, Mfrs. L. & H. Co. 4.
Evans, Decem Dev. Co. 2.

Wells Drilling

Yoho, Hope C. & R. Co. 1.
Rine, Mfrs. L. & H. Co. 2.
Mason Heirs, Klugg Bros. & Co. 2.
McClure, Campbell & Cole 1.
Riter, Mfrs. L. & H. Co. 2.
Boner, Decem Dev. Co. 2.

DODDRIDGE COUNTY

Rigs

Bates, Bates Oil Co. 1.
Smith, Hope C. & R. Co. 2.
Williams, Nay & Williams 1.
Burbridge, Gribble & Co. 2.
Roberts, Keystone Oil Co. 4.
Hudson Heirs, Continental O. & G. Co. 3.

Wells Drilling

Hinkle Heirs, Gulf O. & G. Co. 2.
Ash, D. E. Baker & Co. 1.
Hufford Heirs, Carter Oil Co. 1.
Davis, G. B. Travis 1.
Perrine, Phila Oil Co. 2.
Shinn, Roy Shinn 1.
Freeman, Clifton O. & G. Co. 3.

RITCHIE COUNTY

Rigs

Goff, Carnegie Gas Co. 2.
Smith, Carnegie Gas Co. 1.
Summers, Spruce O. & G. Co. 1.
Snodgrass, Hope Gas Co. 1.
Rollins, Hope Gas Co. 1.
Wass, Carnegie Gas Co. 1.
Lemon, So. P. O. Co. 41.
Lambert, So. P. O. Co. 9.
W. Va. Tract, Whitewood Oil Co. 29.
Haumond Heirs, Barker & Smith 1.
Phillips, Edgar Linch & Co. 1.
Bell, W. A. Clark & Co. 1.
Shaw, J. D. Netzser 1.
Hamilton, Carter Oil Co. 1.
Lamp, G. A. Smith Co. 1.
Haught, Hope Gas Co. 1.
Deem & Co., C. J. Williamson 4.

Wells Drilling

Bartlett, Hope Gas Co. 1.
Bird, Hope Gas Co. 1.
Davis, Hope Gas Co. 1.
Frederick, Beckerstaff & Co. 1.
Hall, Carter Oil Co. 1.
Black, Zinn & Broadwater 1.
J. Black, Parkersburg Oil Co. 1.
Lemon Heirs' Tract, Southern Oil Co. 1.
Howell, Moore & Co. 1.
Rector, Rector Bros. 2.
Jonas, Coss O. & G. Co. 3.
Heflin, Pgh. & W. Va. G. Co. 1.
Hardbarger, J. E. Hardbarger 1.
McCullough, Stephens Oil Co. 2.
Heflin, Phila Oil Co. 1.
Osborne, Hope Gas Co. 1.
Cain, Hope C. & R. Co. 1.
Stanley, Hope C. & R. Co. 1.
Jordan, Hope C. & R. Co. 1.
Newbrough, Adams Oil Co. 5.
Shahan, Nay & Kintzer 1.
Fox, E. E. Pope 2.

GILMER COUNTY

Rigs

Goff, So. P. O. Co. 8.
Hardman, So. P. O. Co. 6, 7.
Ellis, So. P. O. Co. 2.
Bush-Holt, Hope Gas Co. 2.
Richards, Chemical O. & G. Co. 1.
Floyd, Hope C. & R. Co. 1.
Shock, Mill Fork O. & G. Co. 3.

Wells Drilling

Frederick, Hope C. & R. Co. 1.
Ferrell, Hope C. & R. Co. 1.
Bailey, Henry Eddy 1.
Stalnaker, Pgh. & W. Va. G. Co. 1.

BRAXTON COUNTY

Rigs

Engle, W. Va. Central Gas Co. 3.

Wells Drilling

Bender, W. Va. Central Gas Co. 4.
Bender, W. Va. Central Gas Co. 5.
Engle, West Va. Central Gas Co. 5.
Bollinger, Carter Oil Co. 1.
Stump, Pgh. & W. Va. Gas Co. 1.

WIRT COUNTY

Wells Drilling

Gibson, G. B. Vance 42.
Daubenspeck, A. S. Daubenspeck 3.
Swisher, Roberts Oil Co. 10.
Donoho, W. C. Patterson 18.

WOOD COUNTY

Rigs

Pope, E. E. Pope 2.
Coplin, Leighton & Zinn 1.

Wells Drilling

Stone, Stephens Oil Co. 3.
McAtee, W. G. Decker 1.
Allman, L. P. Bickel & Son 1.
Musser, N. Y. Pet. Co. 10.

PLEASANTS COUNTY

Rigs

Rowland, White & Casper 1.

Wells Drilling

Graham, Fait O. & G. Co. 1.
Pryor, Hall & Co. 1.
Miller Heirs, Noland Oil Co. 4.

ROANE COUNTY

Rigs

Craig, So. P. O. Co. 19.
Burroughs, Heck Oil Co. 1.

Wells Drilling

Short, F. F. McIntosh 1.
Meadows, W. P. Heeter 1.
Craig Heirs, Carter Oil Co. 1.
George, Heck Oil Co. 1.
Thorn, Heck Oil Co. 1.
W. F. Thorn, G. L. Cabot 1.
S. B. Young, J. Richardson & Co. 1.

CALHOUN COUNTY

Rigs

Bell, Hope C. & R. Co. 2.
Baker-Baughman, Great Elk Oil Co. 23.

Wells Drilling

Poling, H. C. & R. Co. 1.
Holbert, W. F. Crawley 1.
Thomas, T. Crawley & Co. 1.
Force, Carter Oil Co. 1.
Yoak, Euclid Oil Co. 2.
Loudin, Park & Dailey 2.

JACKSON COUNTY

Wells Drilling

McCoy, Henderson Oil Co. 1.

CLAY COUNTY

Rigs

Goshorn Tract, Shelton Gasoline & Oil Co. 17.
King Heirs, White Sand Pet. Co. 3.
Koontz, Empire Pet. Co. 2.

LINCOLN COUNTY

Rigs

Stephens, Carter Oil Co. 1.
Adkins, Orlando O. & G. Co. 3.

Wells Drilling

Nida, C. Wolf 1.
Keator, Col. G. & E. Co. 1.
Spurlock, Grant Gas Co. 1.
Callahan, Col. G. & E. Co. 1.
Adkins, Roy & McComas 1.
Snyder, C. C. Wolf 1.
Keaton, Cambridge Gas Co. 1.
Cline, Columbia Gas Co. 1.

PUTNAM COUNTY

Rigs

Pike Heirs, Rashman & Stanton 2.

Wells Drilling

Bays, Commercial Gas Co. 1.
Henderson, W. C. Kingery & Co. 1.

BOONE COUNTY

Rigs

Williams Coal Co., Pure Oil Co. 202.
C. R. M. Co., Owens B. & M. Co. 4.
Casingham & Co., Owens B. & M. Co. 6.
Smott, Owens B. & M. Co. 1.
Boone County Poor Farm, Owens B. & M. Co. 2.

Wells Drilling

L. R. & P., Pure Oil Co. 14.
C. R. M. Co., Owens B. & M. Co. 22.
Bull Creek L. & C. Co., Owens B. & M. Co. 1.
Casingham & Co., Owens B. & M. Co. 8.
Yawkey-Freeman, So. P. O. Co. 4.

CABELL COUNTY

Wells Drilling

Wetherholt, Aetna O. G. Co. 1.
Blackwood, Harshbarger O. & G. Co. 1.
Alexander, O. F. O. Co. 1.
Templeton, C. O. Nixon & Co. 1.
Harshbarger, Zogg O. & G. Co. 1.
Birch, Walter Swann & Co. 1.

KANAWHA COUNTY

Rigs

Imperial Coal Co., U. F. G. Co. 34.
Roane Land, Allegheny O. & G. Co. 2.
Ashley, U. F. G. Co. 1.
Harper, U. F. G. Co. 1.

Wells Drilling

Wilkerson, Weona Oil Co. 1.
Quarrier, Owens B. & M. Co. 4.
Boyd, U. F. G. Co. 1.
Imperial Coal Co., U. F. G. Co. 37.
Williams Coal Co., Pure Oil Co. 199.
Scott, Ohio Fuel Oil Co. 2.
Osborne, U. F. G. Co. 4.
Canterberry, U. F. G. Co. 2.
Seabolt, U. F. G. Co. 2.
Rollins, U. F. G. Co. 1.
Goshorn Heirs, Elk Refining Co. 4.
Black Band Fuel Co., So. P. O. Co. 3.

RALEIGH COUNTY

Rigs

Rowland Land Co., Fisher Oil Co. 4.

WAYNE COUNTY

Wells Drilling

Jackson, Chartiers Oil Co. 1.
Rigs, 82; wells drilling, 135; total, 217.

CENTRAL OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Fairfield	1	0	0	1	0	0	0
Ashland	11	0	1	10	6	10	16
Medina	7	0	2	5	3	10	13
Lorain	1	0	1	0	1	7	8
Wayne	16	120	4	8	2	17	19
Richland	1	0	0	1	0	2	2
Hocking	3	0	2	1	0	2	2
Vinton	2	0	0	0	1	1	2
Holmes	11	165	1	6	9	28	37
Coshocton	2	20	0	1	1	0	1
Jackson	3	0	1	2	0	6	6
Athens	16	6	2	13	2	4	6
Meigs	2	7	0	1	0	1	1
Summit	0	0	0	0	0	1	1
Cuyahoga	0	0	0	0	0	1	1
Lawrence	0	0	0	0	0	1	1
Total Nov.	74	318	14	49	25	91	116
Total Oct.	44	110	14	28	24	80	104
Difference	30	208	0	21	1	11	12

WELLS COMPLETED

FAIRFIELD COUNTY

Rush Creek—Graffis, Ruff-Stewart O. & G. 1 ..... gas

ASHLAND COUNTY

Hanover—E. Kick, East Ohio Gas 2.... gas
Vermillion—C. Edinger, W. E. Hawk & Co. 1 ..... dry
Mohican—J. McFadden, M. Snyder & Co. 2 ..... gas
Sarah McFadden, W. L. Rohrer 1 .... gas
Orange—Wm. Monteith, Logan Gas 7.. gas
J. P. Calhoun, Logan Gas 1 ..... gas
J. J. Brown 6, Brown Gas 1..... gas
Dora Richards, Logan Gas 1..... gas
Greene—Clara McMillan, Logan Gas 1.. gas
Lewis Beck, Logan Gas 1 ..... gas
Madison Teeters, Ohio Fuel Gas 1... gas

Wells completed	11
Dry	1
Gas	10

MEDIANA COUNTY

Litchfield—Frank Cinco, Hulse & Koontz 5 ..... dry
Wm. Schultz, Logan Gas 1..... gas
Westfield—T. J. Langadorf, Logan Gas 1 dry
Montville—G. W. Roshon, Ohio Fuel Gas 1 ..... gas
Guilford—J. & M. Winkle, Central Ohio Gas 1 ..... gas
York—H. & G. Wolfe, Logan Gas 1.... gas
Elizabeth Mayer, Ohio Fuel Gas 1... gas

Wells completed	7
Dry	2
Gas	5

LORAIN COUNTY

Grafton—Leland Wise, Ohio Fuel Gas 1 dry

WAYNE COUNTY

Chippewa—W. Bitner, East Ohio Gas 1 dry
A. E. Steiner, East Ohio Gas 1..... gas
Milton—A. & E. Schar, East Ohio Gas 1 gas
Plain—J. W. Horn, Logan Gas 2..... dry
Wm. Beard, Logan Gas 1 ..... dry
E. Eley, Logan Gas 1 ..... dry
Cannan—V. C. Bowman, Logan 2..... gas
E. G. Klinker, Logan Gas 1..... 10
Art Whonsettler, Ohio Fuel Gas 1... 50
S. Whonsettler, Ohio Fuel Gas 1 20
S. Whitmore, Baker Bros. 2 40
E. & G. Myers, Arthur & Mills 3.... gas
F. A. & M. Snell, Arthur & Mills 2... gas
Gail Betz, Globe O. & G. 1..... gas
S. W. Hewit, Daugherty Bros. 1..... gas
J. M. Wiles, H. S. Cameron 2..... gas

Wells completed	16
Production, oil	120
Dry	4
Gas	8

RICHLAND COUNTY

Monroe—S. M. Douglass, Ohio Fuel Gas 1 gas

HOCKING COUNTY

Benton—J. W. Mauk, Logan Gas 6.... gas
A. B. Lytle, Logan Gas 1 ..... dry
Jeremiah Illes, Ohio Fuel Gas 1..... dry

Wells completed	3
Dry	2
Gas	1

HOLMES COUNTY

Monroe—Chas. Barnes, Ohio Fuel Gas 1 gas
Thos. Allison, Central Ohio Gas 1... gas
U. S. Davenport, Central Ohio Gas 1 gas
Milton Bell, Central Ohio Gas 2..... gas
J. H. Lepple, Central Ohio Gas 1..... gas
S. V. Allison, Central Ohio Gas 1.... dry
Oscar Korns, Central Ohio Gas 2..... 10
Prairie—W. F. Kendall, East Ohio Gas 1 50
Hardy—S. H. Sterling, East Ohio Gas 1 25
Sam Franks, Carter Oil 1 80
Scott V. Mast, Logan Gas 1 ..... gas

Wells completed	11
Oil wells	4
Production	165
Dry	1
Gas	6

COSHOCTON COUNTY

Newcastle—Moses Dailliere, Logan Gas 1 20
Wm. Ringwalt, Logan Gas 3 ..... gas

Wells completed	2
Production	20
Gas	1

JACKSON COUNTY

Coal—Ed Townsend, Ohio Fuel Supply 1 dry
G. W. Roach, Ohio Fuel Supply 1.... gas
D. D. Evans, Ohio Fuel Supply 1.... gas

Wells completed	3
Dry	1
Gas	2

ATHENS COUNTY

Carthage—M. Kinnon, Logan Gas 3.... gas
Jacob Varner, McBride & Co. 1..... gas
F. W. Chapman 25, Shady River O. & G. 10 ..... gas
J. E. Bailey, Jay O. & G. 4..... gas
E. Dunlavey, Bradford O. & G. 7.... gas
Kate Evans, H. M. Waidron & Co. 1.. gas
Oscar Clark, Ohio Fuel Gas 2 ..... gas
Troy—Fritz Ahrendt, McBride & Co. 2. gas
Rome—J. C. Prent, H. W. Leeper & Co. 2 gas
Thos. McGraw, Pittsburgh Gas 2.... gas
W. B. Rice, Rice O. & G. 4 ..... gas
E. Bryon, Dunham Bros. 1 ..... gas
E. Cunningham, Stewart O. & G. 5... dry
G. S. Parker, Stevens & Co. 4 6
Waterloo—S. J. Lowery, Logan Gas 2.. gas
York—Arnet Heire, Stevens & Co. 2.... dry

Wells completed	16
Production	6
Dry	2
Gas	13

MEIGS COUNTY

Sutton—Robt. Crow, Ohio Fuel Supply 1 7
C. W. Cornell, Ohio Fuel Supply 1.... gas

Wells completed	2
Production	7
Gas	1

ASHLAND COUNTY

Rigs

Hanover—H. Brookman, East Ohio Gas 1.
Howard Bookman, Logan Gas 2.
J. W. Sellers, Logan Gas 2.
Rhoda Black, Ohio Fuel Gas 1.
Orange—J. J. Brown 6, Logan Gas 1.
Greene—Martha Bowen, Logan Gas 2.

Wells Drilling

Hanover—Geo. Carnagey, Logan Gas 2.
Perry Blac, Logan Gas 2.
Mohican—G. W. Black, Logan Gas 2.
Orange—Mm. Monteith, Logan Gas 8, 9.
John J. Brown 7, Logan Gas 1, 2.
A. H. McClelland, Hulse & Koontz 1.
Greene—Hilda Kline, Logan Gas 1.
P. C. Cowan, Logan Gas 1.
Rigs, 6; wells drilling, 10; total, 16.

MEDINA COUNTY

Rigs

Harrisville—J. Wisler, Logan Gas 1.
Montville—J. K. Nold, Ohio Fuel Gas 1.
York—Ada G. Swartz, Ohi Fuel Gas 1.

Wells Drilling

Harrisville—J. E. Zimmerman, Logan Gas 1.
Henry Garmon, Ohio Fuel Gas 1.
Melissa Steel, East Ohio Gas 1.
Litchfield—Frank Burrer, East Ohio Gas 1.
Theodore Haury, Logan Gas 1.
Fafayette—Mary McCleary, Logan Gas 1.
Infirmary farm, Logan Gas 4.
Hipolite Karas, Ohio Fuel Gas 1.
York—E. M. Brinstall, Logan Gas 2.
Brunswick—Gabriel Kovach & Co., Ohio Fuel Gas 1.
Rigs, 3; wells drilling, 10; total, 13.

LORAIN COUNTY

Rigs

Columbia—C. F. Ruder, Ohio Fuel Gas 1.

Wells Drilling

Grafton—Robert Nesbit, East Ohio Gas 1.
Fred Klinech, Logan Gas 2.
George Mole, Ohio Fuel Gas 1.
Columbia—C. & E. Harold, Ohio Fuel Gas 1.
Jeremiah Martin, Logan Gas 1.
S. A. Ives, Logan Gas 1.
Sheffield—Rose Burrelle, A. J. O'Donnell 1.
Rigs, 1; wells drilling, 7; total, 8.

WAYNE COUNTY

Rigs

Cannan—W. Shoemaker, Central Ohio Gas 1.
M. S. Shoemaker, Central Ohio Gas 1.

Wells Drilling

Wooster—Lee N. Martin, Ohio Oil 1.
L. I. Buchannan, Ohio Oil 1.
Milton—Elmer Steiner, Logan Gas 1.
C. Ziegler, East Ohio Gas 1.
Plain—W. M. Gill, Logan Gas 3.
Cannan—S. Wonsettler, Ohio Fuel Gas 1.
Wm. S. Smith, Ohio Fuel Gas 3.
Clara L. Sells, Ohio Fuel Gas 1.
M. Younker, Klise-Eckstein-McCann 1.
R. J. Whonsettler, C. A. Rice & Co., 1.
A. B. Fouch, Logan Gas 1.
J. Kissinger, Logan Gas 2.
C. Sells, East Ohio Gas 1.
Yoder, Daugherty Brothers 1.
Daniel Wiles, Butler Brothers 3.
J. Bowers, Burtner-Morgan, Stephens 1.
M. Shoemaker, Central Ohio Gas 1.
Rigs, 2; wells drilling, 17; total, 19.

RICHLAND COUNTY

Wells Drilling

Springfield—Hout, Berry & Hout 1.
Franklin—J. Lantz, Coyle & Matthews 2.
Wells drilling, 2.

HOCKING COUNTY

Wells Drilling

Benton—J. and Cora Cain, Logan Gas 1.
Thomas W. Burns, Logan Gas 1.
Wells drilling 2.

VINTON COUNTY

Rigs

Clint—E. C. Wortman, Ohio Fuel Gas 1.

Wells Drilling

Clint—B. F. Wells, Ohio Fuel Gas 1.
Rigs, 1; drilling, 1; total, 2.

HOLMES COUNTY

Rigs

Monroe—Charles Barnes, Ohio Fuel Gas 4.
B. P. and Lena Uhl, Ohio Fuel Gas 2.
Alma Martin, Ohio Fuel Gas 1.
Edwin M. Martin, Ohio Fuel Gas 1.
McCullough, East Ohio Gas 1.
W. A. Smith, Central Ohio Gas 2.
W. C. Bird, Central Ohio Gas 1.
Albert Mackey, East Ohio Gas 2.
Prairie—Homer A. Bell, East Ohio Gas 1.

Wells Drilling

Monroe—Charles Barnes, Ohio Fuel Gas 1.
B. P. and Lena Uhl, Ohio Fuel Gas 1, 2.
Oscar Kerns, Ohio Fuel Gas 2.
L. W. Harford, Ohio Fuel Gas 1.
Milton J. Lowe ,East Ohio Gas 2.
M. G. Bird, East Ohio Gas 2.
C. M. Shank, East Ohio Gas 2, 3.
Welcome Church, East Ohio Gas 1.
Albert R. Mackey, East Ohio Gas 1.
J. B. Finney, Central Ohio Gas 1.
W. A. Smith, Central Ohio Gas 1.
U. S. Davenport, Central Ohio Gas 1.
Charles Barnes, Klise-Eckstein-McCann 1.
Saunders Martin, Klise-Eckstein-McCann 1.
W. R. Parsons, Rocky River Dev. 1.
C. C. Jarvis, Rocky River Dev. 4.
Al Mackey, Burner-Morton, Stephens 1.
Prairie—R. and E. Robinson, Ohio Oil 1.
Washington—W. S. Fulmer, Logan Gas 1.
Kilbuck—J. S. Jackson, Carter Oil 1.
Hardy—Jac. Uhl, East Ohio Gas 3, 4.
H. S. Sterling, East Ohio Gas 1, 2.
Harvey Bell, East Ohio Gas 1.
S. S. Troyer, Central Ohio Gas 1.
Rigs, 9; wells drilling, 28; total, 37.

COSHOCTON COUNTY

Rigs

Newcastle—William Johnson, Logan Gas 1.

JACKSON COUNTY

Wells Drilling

Coal—L. V. Reed, Ohio Fuel Gas Co. 2.
Franklin—M. L. Kinnon, Logan Gas 1.
Stewart-Cheerington, Ohio Fuel Supply 1.
Matilda Mercer, Ohio Fuel Supply 1.
Like—Mary B. Emmons, Ohio Fuel Supply 2.
Washington—Emma Coal, Ohio Fuel Gas 1.
Wells drilling, 6.

ATHENS COUNTY

Rigs

Carthage—Ed Rowan, Ohio Fuel Supply 1.
Troy—C. H. Ford, Ohio Fuel Supply 1.

Wells Drilling

Carthage—Union Trust, Ohio Fuel Gas 1.
Bailey-Tedrow, Jay O. & G. 2.
F. W. Chapman 19, Shady River O. & G. 10.
Rome—W. B. Rice, Rice O. & G. 5.
Rigs, 2; wells drilling, 4; total, 6.

MEIGS COUNTY

Wells Drilling

Sutton—M. L. Easterday, Ohio Fuel Supply 1.

SUMMITT COUNTY

Well Drilling

Ritchfield—E. H. Morton. East Ohio Gas 1.

CUYAHOGA COUNTY

Well Drilling

Strongville—T. Francis. East Ohio Gas 1.

LAWRENCE COUNTY

Well Drilling

Aid—George Cariyle, Ohio Fuel Supply 1.

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	11	133	1	0	2	10	12
Hancock	6	84	1	1	1	3	4
Allen	4	47	1	0	2	1	3
Auglaize	5	140	0	0	0	0	0
Sandusky	1	2	0	0	0	0	0
Mercer	8	38	3	2	0	1	1
Van Wert	1	10	0	0	0	0	0
Seneca	0	0	0	0	0	0	0

Lucas	0	0	0	0	0	2	2
Ottawa	3	44	0	0	0	4	4
Darke	0	0	0	0	0	2	2
Shelby	3	40	1	1	0	3	3
Paulding	8	47	0	3	1	5	6
Hardin	1	10	0	0	0	3	3
Defiance	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	2	2
Michigan	0	0	0	0	0	2	2
Total Nov.	51	595	6	7	4	60	64
Total Oct.	62	737	6	5	3	64	67
Difference	11	142	0	2	1	4	3

WELLS COMPLETED

WOOD COUNTY

Montgomery—Perry, Ray Stahl 8, 9, 10 abd
Freedom—B. Brockover, J. Ed. Matzinger 6 15
H. Czirr, Cleveland Fuel Oil 2..... abd
Plain—Joe Lane, Bert Ladd 2..... 20
Bloom—M. L. Donahay, Brennan Oil 24 15
Liberty—D. W. Levers, Hulse & Koontz 2 6
Sam Croker, Ray Oil 10..... 2
D. J. Corey 14, Ohio Oil 9, 34..... abd
Henry—A. D. Chidester, Agnetta D. Chidester 13 10
J. Franks, Sr., Ohio Oil 14..... abd
Middleton—F. H. Speck, Fred H. Speck 4 10
Lake—Gideon Laplant, John Patton & Co. 1 ..... dry
Henry Schulte, Lantz, Greeg & Schulte 6 30
Ed Young, Keiser, Brown & Co. 8.... 5
Milton—O. W. Chapman, Hulse & Koontz 1, 2 ..... abd
Troy—Anna Hartman, Modern Oil 1.... 20

Wells completed 11
Production 133
Dry 1
Abandoned 9

HANCOCK COUNTY

Portage—B. Twing, Urchalitz Oil 1.... 7
Union—Wm. Rainer, Rainey Oil 10.... 15
Pleasants—John Bryan, Bath Township Oil 4 35
Allen—J. D. Smitler, Ohio Oil 5..... abd
Liberty—A. P. Byal, Kirk & Bowers 1 gas
Eagle—N. Powell, Star & Clark 9..... 15
Biglick—M. E. James, Ohio Oil 1..... 12

Wells completed 6
Production 84
Gas 1
Abandoned 1

ALLEN COUNTY

Marion—Jos. Metzger, Deem Oil 1..... 2
M. L. Boyer, M. P. Colt 26, 27, 28, 29, 30, 31, 22, 34, 35, 36, 37..... abd
Amanda—W. & S. A. Lutz, W. L. Parmenter 5, 6 ..... abd
Spencer—Anna Youngpeter, W. W. Rook 2..... 25
Mary E. Gross, South Fork Oil 3.. dry
Bath—Ellis Lewis, C. A. Peavey & Co. 11 20
Elias Lewis, C. A. Peavey 5, 6..... abd
H. L. Solomon, Conway, Botkins & Co. 1, 2 ..... abd

Wells completed 4
Production 47
Dry 1
Abandoned 18

AUGLAIZE COUNTY

Moulton—A. E. Long, W. B. Jack 1.... 40
John Tester, Cliff Blair & Co. 1..... 15
J. Rapp, Neeley-Clover Oil 1..... 15
W. E. Cook, Geselchen & Young 3.... 40
T. R. Julian, Fowler Bros. Pet. 2.... 30

Wells completed 5
Production 140

SANDUSKY COUNTY

Woodville—C. Buseicker, R. E. Harman 1 2
Madison—F. Faulkner Sr., Mountler Bros 2 ..... abd
H. Myers No. 2, Ohio Oil 1..... abd
Washington—A. Neiset, Zorn-Hornung Oil 9 ..... abd
Sandusky—H. Miarer, Rich Oil 5, 16.... abd

Wells completed 1
Production 2
Dry 0
Abandoned 5

MERCER COUNTY

Gibson—Joe. Schmidt, W. G. & J. Henderson 3 10
H. L. Echner, Pennsylvania Oil 2..... 10
Recovery—B. Dues, Pennhoma Oil 1... dry
Butler—H. Rummell, O. J. McGuigan & Co. 1 ..... dry
S. Snyder, Defenbaugh & Co. 1, 2.... gas
Liberty—Phil Strable, L. E. Metz & Co. 2 ..... dry
Dublin—W. W. Shaffer, J. G. Cochran 1 18
Union—Scott Hays, Ohio Oil 3..... abd

Wells completed 8
Production 38
Dry 3
Gas 2
Abandoned 1

VAN WERT COUNTY

Willshire—J. B. Eaton, N. T. Kuhns & Co. 1 ..... abd
F. Lillich, W. C. McCray 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 18, 19..... abd
York—A. J. Haigh, W. H. Young 2.... 10

Wells completed 1
Production 10
Dry 0
Abandoned 15

LUCAS COUNTY

Jerusalem—J. W. Johnson, Paragon Refining 2, 3, 4, 5, 6, 7, 8, 9..... abd
Oregon—Schmidlin - Hefflin, Paragon Ref. 1, 2, 3, 4 ..... abd
C. W. Schmidlin, Paragon Ref. 2, 3.. abd
Henry Schapman, Paragon Ref. 3, 4.. abd
Anna Becker, Paragon Ref. 1, 5 .... abd
John McIntyre, W. W. Farnsworth 21, 22, 23, 24 ..... abd
T. Navarre, R. J. Schrag 4 ..... abd
Dry 0
Wells completed 0
Production 6
Dry 0
Abandoned 23

OTTAWA COUNTY

Harris—E. W. Yeasting, Zorn-Hornung Oil 12 13
Clay—H. G. Bushman, River Oil 1..... 20
R. Reynolds, Reynolds Oil 2 11
Allen—A. C. Shimming, Ohio Oil 1, 2. abd

Wells completed 3
Production 44
Abandoned 2

SHELBY COUNTY

Cynthian—C. Broerman, Harmon, Lyons & Co. 4 40
Turtle Creek—C. Hoover, McClure & Marshall 1 ..... dry
Franklin—E. H. Maurer, Osage Oil 1.. gas

Wells completed 3
Production 40
Dry 1
Gas 1

PAULDING COUNTY

Harrison—Thomas Lamb, Aetna Drilling 3 20
Benton—Alonzo Thompson, W. J. Wharton & Co. 1..... 5
Jac. Stabler, J. H. Harmon & Co. 1.. 7
Smith, E. Stevenson 3..... 10
J. Birkhold, McIntosh Oil 1 ..... gas
Papenbrook, E. Stevenson 1..... gas
Paulding—G. Barnes Estate, Blackburn Brothers 1 5
W. D. Graham, W. E. Hawk & Co. 1 gas

Wells completed 3
Production 47
Gas 3

HARDIN COUNTY

Marion—Sarah Keller, Schmidt & Co. 1 10

WOOD COUNTY

Rigs

Perrysburg—D. Lahy, W. F. Johnson 7.
O. P. Spilker, Davis & Carroll 3.

Wells Drilling

Freedom—B. Brookover, J. Ed. Matzinger 7.
Plain—R. N. Green, Virginia Perry 1.
R. & H. Burkhalter, Barclay Perry 3.
Harley Avery, Scheidt, Hamann & Huston 1.
Bloom—F. B. Loose, Western Ohio Oil 3.
C. A. Browning, Clark A. Browning 20.
Henry—Elizabeth Blackall, H. A. Werner & Co. 8.
Lake—Emil Brendt, Charles F. Zeising & Co. 3.
Troy—Hall Brough, Charles Zeising & Co. 1.
Webster—Charles Geldine, Johnson, Hummel & Co. 1.
Rigs, 2; wells drilling, 10; total, 12.

HANCOCK COUNTY

Rigs

Biglick—D. Chambers, R. Allen 1.

Wells Drilling

Eagle—J. McClelland, S. Porter & Co. 2, 3.
Biglick—James Cross, Cole Bros. 1.
Rigs, 1; wells drilling, 3; total, 4.

ALLEN COUNTY

Wells Drilling

Spencer—Anna Youngpeter, W. W. Rook 3.
Bath—Eliza Youngkenan, Conway, Botkins & Co. 5.
Rigs, 0; wells drilling, 2; total, 2.

AUGLAIZE COUNTY

Wells Drilling

Moulton—G. R. Julian, Fowler Brothers Pet. 3.
Grant Tester, W. B. Jack 1.
John Rapp, Neely-Clover Oil 2.
Salem—W. E. Miller, Drake Oil 1.
Logan—Charles McPherson, E. O. Leober 1.
Rigs, 0; wells drilling, 5; total, 5.

MERCER COUNTY

Wells Drilling

Gibson—L. Rummell, Delta Oil 2.
A. Miller, Delta Oil 1.
W. Klingshirn, W. Klingshirn 1.
Butler—E. Snyder, Defenbaugh & Co. 3.
John Dues, R. E. Young 1.
Hopewell—S. Fetters, J. A. Metzger 2.
C. C. Ricketts, E. A. Kuhns & Co. 3.
Granville—J. B. Brunswick, P. Shilling 1.
Washington—Florence Heirs, Callahan & Mayhue 1.
Rigs, 0; wells drilling, 9; total, 9.

VAN WERT COUNTY

Wells Drilling

Jennings—W. C. Shiley, Stanley Oil 3.
Ridge—J. E. Moore, Calvin Neely 2.
Harrison—S. E. German, Bolyard, Barnett & Co. 2.
Pleasants—M. H. Hoffman, American Engineering Co. 2.
Willshire—Elias Sheets, J. H. Harmon 1.
Rigs, 0; wells drilling, 5; total, 5.

SENECA COUNTY

Wells Drilling

Jackson—Mary A. Miller, G. W. Michael 5.
Clinton—Katherine Akers, Arthur Geyer & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

LUCAS COUNTY

Wells Drilling

Monclova—William Black, Swan Creek O. & G. 2.
Waterville—School Lands, Waterville Gas Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

OTTAWA COUNTY

Wells Drilling

Harris—Luckey, O. L. Luckey 4.
Charles Kineriam, Zorn-Hornung Oil 1.
Clay—H. G. Bushman, River Oil 2.
Allen—John Schissler, R. M. Bell 1.
Rigs, 0 ;wells drilling, 4; total, 4.

DARKE COUNTY

Wells Drilling

Mississinewa—W. H. Long, J. G. Hoffman 6.
Wayne—John Manier, Fred Biel & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

SHELBY COUNTY

Wells Drilling

Cynthian—Ellerman, Ellerman Oil 4.
L. McClark, Ohio Oil 1.
Laramie—H. Pauls, O. J. McGuigan & Co. 1.
Rigs, 0; wells drilling, 3; total, 3.

PAULDING COUNTY

Rigs

Benton—John D. Lamb, W. J. Wharton & Co. 1.

Wells Drilling

Harrison—A. M. Bailey, The U. S. A. Oil 2.
A. N. Miller, Aetna Drilling 1.
Benton—W. L. & E. A. Lentz, D. M. Lipps 1.
Mary Stabler, Stanton Isaacs 1.
Brown—R. L. Dill & Co., Ernest E. Johnson 2.
Rigs, 1; wells drilling, 5; total, 6.

HARDIN COUNTY

Wells Drilling

McDonel—Eliza McArthur, Roundhead O. & G. 2.
A. R. Zimmerman, Whipple, Ulrich & Co. 2.
Marion—J. Hinebaugh, McGuffey O. & G. 1.
Rigs, 0; wells drilling, 3; total, 3.

DEFIANCE COUNTY

Wells Drilling

Adams—Adams Township G. & O. 2.

CRAWFORD COUNTY

Wells Drilling

Galion—Town Lot, Weed-Hamilton O. & G. 1
Texas—Charles Oder, The Sun Oil Co. 1.

MICHIGAN

MONROE COUNTY

Wells Drilling

Dundee—F. Roe, Jackson County O. & G. 1.

JACKSON COUNTY

Wells Drilling

Napoleon—Silvers, Jackson County O. & G. 1.

INDIANA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wells	1	40	0	0	0	1	1
Jay	7	87	2	0	0	2	2
Adams	1	3	0	0	0	2	2
Adams	1	3	0	0	0	2	2
Grant	2	7	0	0	0	0	0
Delaware	1	75	0	0	0	2	2
Randolph	0	0	0	0	1	1	2
Gibson	1	20	0	0	0	6	6
Pike	3	50	1	0	0	0	0
Sullivan	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Hendricks	0	0	0	0	0	1	1
Total Nov.	16	282	3	0	1	17	18
Total Oct.	9	190	3	1	1	18	19
Difference	7	92	0	1	0	1	1

WELLS COMPLETED

WELLS COUNTY

Liberty—J. E. Davis, Lewis Oil Corp. 10 40

JAY COUNTY

Pike—M. Mott, Omar O. & G. 10..... 2
Penn—C. C. Harris, American Engineering 2 50
L. D. Edmondson, American Engineering 1 ..... dry
N. Thomas, Amber O. Prod. 3 10
L. B. Craig, Barnett, Trusler & Co. 1 dry
Bear Creek—James Jeffries, Mesel & Spencer 5 5
James Jeffries, Mesel & Spencer 4.. 20

Wells completed 7
Production 87
Dry 2
Gas 0

ADAMS COUNTY

Hartford—M. L. Sours, Mason & Co. 2 3

GRANT COUNTY

Pleasants—William Troyer, Scott & Shister Rec. 2 2
Jefferson—A. D. Mittank, Jacob Wides 1 5

DELAWARE COUNTY

Liberty—J. Cline, Geo. D. Roberts 5... 75

GIBSON COUNTY

Washington—S. Cunningham, Ohio Oil 3 abd
Union—Thos. Compton, J. H. Young & Co. 1 20

Wells completed 1
Production 20
Dry 0
Abandoned 1

PIKE COUNTY

Lockhart—C. Bowermeister, J. E. Sullivan 1 ..... dry
Logan—D. S. Huey, Noble-Bolyard Oil 9 30
Clay—Eldon Catt, A. B. Bement 1 20
Madison—Dave Snyder, Ohio Oil 2.... abd
G. W. McAtee, Ohio Oil 3 ..... abd
George W. Willis, Ohio Oil & Bement 3 ..... abd
J. R. Gladish Heirs, Murphy Oil of Pennsylvania 5 ..... abd

Wells completed 3
Production 50
Dry 1
Abandoned 4

WELLS COUNTY

Wells Drilling

Liberty—J. E. Davis, Lewis Oil Corp. 11.

JAY COUNTY

Wells Drilling

Penn—James Sutton, American Engineering 1.
Jackson—B. Brunson, D. L. Thompson & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

ADAMS COUNTY

Wells Drilling

Wabash—John Kelley, D. L. Thompson 1.
J. H. Barr, W. J. Heeter 4.
Rigs, 0; wells drilling, 3; total, 2.

DELAWARE COUNTY

Wells Drilling

Delaware—J. W. Goings, De Soto Oil Syndicate 9.
Liberty—J. Cline, George D. Roberts 6.
Rigs, 0; wells drilling, 2; total, 2.

RANDOLPH COUNTY

Rigs

Green—W. Cline, T. O. Thorp 1.

Wells Drilling

Licking—C. J. Carmine, Hartford O. & G. 1.
Rigs, 1; wells drilling, 1; total, 2.

GIBSON COUNTY

Wells Drilling

Washington—Ira Seifer, Lynche & Co. 1.
Center—Sam Massey, Murphy Oil 1.
John Wirtz, Gray & Co. 3.
W. Steiner, Tichenour & Edmonds 2.
August Black, J. H. Young & Co. 1.
Barton—H. Raiborn, Nelson Brothers 1.
Rigs, 0; wells drilling, 6; total, 6.

SULLIVAN COUNTY

Wells Drilling

Turman—R. Abell, H. Stewart & Co. 1.

HARRISON COUNTY

Wells Drilling

Vorydon—John Blake, Railroader Oil 2.

HENDRICKS COUNTY

Wells Drilling

Clay—W. E. Christy, Amo Oil 1.

ILLINOIS FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Clark	4	160	0	0	5	5
Cumberland	2	0	2	0	0	0
Crawford	1	0	1	0	2	2
Lawrence	0	0	0	0	3	3
Marion	0	0	0	0	1	1
Wabash	6	420	3	2	4	6
Douglas	0	0	0	0	1	1
Coles	1	15	0	0	0	0
Union	0	0	0	0	1	1
Fayette	0	0	0	0	1	1
Jasper	0	0	0	0	1	1
Total November.	14	595	6	2	23	25
Total October	21	597	10	6	23	29
Difference	7	2	4	4	0	4

WELLS COMPLETED

CLARK COUNTY

Casey—John Laigner, Boyd, Eaton & Co. 1 35
Wm. Reisinger, Gillette & Co. 1.... 40
Martinsville—A. W. Covalt, Ohio Oil 3 30
Johnson—Z. E. Brandt, Ohio Oil 16.... 55

Wells completed 4
Production 160
Dry 0
Gas 0

CUMBERLAND COUNTY

Sumpter—Dobbs-Brewer, Central Illinois Pet. 1 ..... dry
Neoga—Granchen, C. Karnes 1 ..... dry

Wells completed 2
Dry ..... dry
Production 0
Gas 0

CRAWFORD COUNTY

Martin—Mary Walker, C. C. Curtis & Co. 1 ..... dry

LAWRENCE COUNTY

Bridgeport—C. H. Fyffe No. 2, International & Murphy 8 ..... abd
Squire Kinsey, Hamilton Prod. 1 .... abd
S. W. Zeller, Hamilton Prod. 7..... abd

Wells completed 0
Production 0
Dry 0
Abandoned 3

MARION COUNTY

Sandoval—Henry Bolner, Southwestern O. & G. 1. ..... abd

WABASH COUNTY

Wabash—W. G. Armstrong, J. S. Young & Co. 1 ..... dry
C. E. Courter, J. W. Whiteside & Co. 1 390
L. Chapman, J. W. Whiteside & Co. 1 15
W. F. Courter, Hartman, Parrott & Young 1 20
Van Wright, Midland O. Corp. 1.... dry
J. Buchanan, Timberlake & Co. 1 .. dry

Wells completed 6
Production 420
Dry 2
Gas 0

COLES COUNTY

Hutton—Wm. Roach, Colegrove & Co. 18 15

CLARK COUNTY

Wells Drilling

Parker—S. Turner, W. F. Small 1.
Casey—Chas. Lowe, R. G. Holmes & Co. 3.
Zora Shawver, Chrysler & Co. 2.
Wheeler Baker, Arkansas Fuel Oil 1.
William Reisinger, Gillette & Co. 2.
Martinsville—W. D. Slater, Titus Oil 1.
D. Morgan, Rhodes & Keith 3.
Nettie Baker, W. C. McBride, Inc. 4.
Johnson—Charles Snearley, Squires & Co. 11.
Rigs, 0; wells drilling, 9; total, 9.

CRAWFORD COUNTY

Wells Drilling

Oblong—Ed Henry, Dinsmore & Co. 3.
Martin—D. C. Brubaker, W. W. Spiane 9.
Rigs, 0; wells drilling, 2; total, 2.

LAWRENCE COUNTY

Wells Drilling

Lawrence—G. L. Dunlap, Samuels, Duffield & Co. 10.
Dennison—Harriett Leighty, S. J. Gee, Sr. 13.
H. A. Seed, Curtis & Co. 1
Rigs, 0; wells drilling, 3; total, 3.

MARION COUNTY

Wells Drilling

Sandoval—A. E. Benoist, Fox-Alsbach Oil Corp. 1.

WABASH COUNTY

Rigs

Wabash—Frank Smith, Arkansas Fuel Oil & Co. 1.
Howard Armstrong, J. H. Whiteside & Co. 2.

Wells Drilling

Wabash—William Stillwell, Timberlake & Co. 1.
L. Lidale, Wirebach & Co. 1.
H. A. Price, Wirebach & Co. 1.
Friendsville—O. Matheney, Arkansas Fuel Oil & Gas Co. 1.
Rigs, 2; wells drilling, 4; total, 6.

DOUGLAS COUNTY

Wells Drilling

Sargent—W. E. Brown, Douglas Oil 1.

UNION COUNTY

Wells Drilling

Bald Knob—Near Alta Pass, W. MacSmith 1.

FAYETTE COUNTY

Wells Drilling

Pope—John Baxter, McCurdy & Co. 1.

JASPER COUNTY

Wells Drilling

Smallwood—N. Cunningham, George Danvers 1.

KENTUCKY-TENNESSEE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wayne	8	13	6	0	0	9	9
Powell	0	0	0	0	0	1	1
Estill	1	30	0	0	0	1	1
Wolfe	4	47	1	0	0	3	3
Morgan	1	0	1	0	0	1	1
Lee	15	159	2	0	0	5	5
Lawrence-Johnson	14	467	1	0	0	19	19
Johnson-Magoffin	15	110	1	1	0	23	23
Allen	25	378	13	0	0	26	26
Warren	14	456	2	0	2	25	27
Barren	25	123	6	0	1	31	32
Owensboro	9	11	5	0	0	10	10
Cumberland	7	305	5	0	0	11	11
Russell	1	9	0	0	0	3	3
Metcalf	1	0	1	0	0	3	3
Simpson	1	0	1	0	1	0	1
Logan	1	0	1	0	0	2	2
Owsley	4	225	1	0	0	4	4
Elliott	4	17	2	0	1	2	3
Adair	1	0	1	0	0	0	0
Rowan	4	60	0	2	0	2	2
Breathitt	1	0	0	1	0	0	0
Laurel	1	0	1	0	0	1	1
Pike	0	0	0	0	0	1	1
Harlan	0	0	0	0	1	0	1
Bell	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Floyd	4	0	3	3	1	1	2
Fleming	1	5	0	0	0	1	1
Menifee	1	10	0	0	0	0	0
Martin	0	0	0	0	0	1	1
Clay	1	0	1	0	0	2	2
Boyd	1	0	0	1	0	1	1
Kentucky	165	2,425	53	8	7	191	198
Tennessee	3	1,050	1	0	2	19	21
Mississippi	0	0	0	0	0	26	26
Alabama	0	0	0	0	0	11	11
Georgia	0	0	0	0	1	4	5
Total Nov.	168	3,475	54	8	16	245	261
Total Oct.	156	2,123	35	7	16	253	269
Difference	12	1,352	19	1	0	8	8

WAYNE COUNTY

Wells Completed

Monticello—Ira Guffey, C. E. Daugherty 2 ..... dry
M. F. Hicks, Geo. A. Hook & Co. 1.. dry
J. Bobbitt, Meredith & Co. 1..... 3
Jas. Dabney, Superior Oil Corp. 6.... 10
Bell hrs., Wetzel & Bell 1..... dry
L. N. Morrow hrs., Bowden & Co. 1, 2 dry
Grover Roberts, Cooper & Miller 1... dry

Wells completed 8
Production 13
Dry 6

ESTILL COUNTY

Wells Completed

Irvine—Near Irvine, Pratt & Scott 6.. 30

WOLFE COUNTY

Wells Completed

Torrent—Ann Horton, McCombs Prod. & Refg. 8 15
Watson hrs., Superior O. Corp. 1..... dry
Watson hrs., Superior O. Corp. 2.... 2
E. B. Roberts, Federal Oil Corp. 3.. 30

Wells completed 4
Production 47
Dry 1

MORGAN COUNTY

Wells Completed

Cannel City—Kendall Bros. Pet. Explo. 5 dry

LEE COUNTY

Wells Completed

Beattyville—Gourley - McGuire, Black Gum Oil 6 30
Porter-Treadway, Pet. Explo. 2..... 10
Eliza Brandebury, Pet. Explo. 2..... 10
Gourley-McGuire, Pet. Explo. 1..... 10
Gourley-McGuire, Pet. Explo. 2..... 10
Spencer-Flannery, Pet. Explo. 10..... 15
Spencer-Flannery, Pet. Explo. 11..... 5
Jones Rowland, Pet. Explo. 1..... dry
Dora Mays, French & Co. 1..... 10
Claud Porter, Hupp, Duff & Co. 1.... 2
Price, Beimer & Co. 1..... dry
Demise, Demise & Co. 1..... 3
J. D. Smythe, Superior O. Corp. 22.. 2
Brandebury, Carter Oil 1..... 12
J. & A. Porter, Swiss O. Corp. 2..... 40

Wells completed 15
Production 159
Dry 2

LAWRENCE-JOHNSON COUNTIES

Wells Completed

North Weir—Wm. Lester, Union Gas & Oil 7 30
Levisa Skaggs, Union Gas & Oil 17.. 60
P. P. Holbrook, Union Gas & Oil 29.. 70
J. C. Gilliam No. 1, Union Gas & Oil 8 30
W. O. Gambill, Union Gas & Oil 1.... dry
R. N. Sparks No. 2, Union Gas & Oil 1 80
John Rose, Union Gas & Oil 4..... 30
C. K. Dobyne, Garrison & Townsend 4 60
C. K. Dobyne, Garrison & Townsend 5 100
Robt. Fyffe, Pluto Oil 4..... 2
Robt. Fyffe, Pluto Oil 5..... 4
Geo. Salyer, W. M. Larkin & Co. 3.. 1
S. Q. Kelley, Fred Stone & Co. 1.... 10
W. M. Boggs, Cumberland Pet. 11.... 2

Wells completed 14
Production 467
Dry 1

JOHNSON-MAGOFFIN COUNTIES

Wells Completed

South Weir—W. H. Collins, Pet. Explo. 3 5
Unknown, Pure Oil 1 ..... gas
B. R. Hamilton, Dave Fox 3..... 4
Elkhorn Coal, Pet. Explo. 1..... dry
Chas. Roark, Burning Fork Synd. 8.. 32
T. J. Powers, Clyde Oil 2..... 10
Julia Salyer, Magoffin Dev. Synd. 2.. 10
J. H. Arnett, Bed Rock Oil 16..... 4
Bailey hrs., Diamond Oil 2..... 8
Branch Blanton, Mid-South Oil 2.... 5
Chas. Wheeler, Carter Oil 5..... 4
S. & J. Blanton, R. G. Gillespie 13.... 10
S. & J. Blanton, R. G. Gillespie 14.... 10
W. P. Adams, New Domain O. & G. 10
B. F. Whitt, A. H. Adams 1 6

Wells completed 15
Production 110
Dry 1
Gas 1

ALLEN COUNTY

Scottsville—J. E. Meredith, C. K. Boller 1 5
J. Hinton, Free Lance Oil 6..... 4
Pepper, Andrus & Gardner 2 ..... dry
R. S. Welch, Work Co. 2..... dry
Wheat, Parson, Basture & Co. 3..... 5
Wheat, Parson, Bastrus & Co. 3..... 5
Cherry, Mrs. McAlpin & Co. 7..... 5
W. L. Motley, W. R. Thompson & Co. 11 ..... dry
Tinsley, Ming & Co. 1..... dry
Clay Harmon, Zeigler & Co. 2..... dry
M. Dodson, Williams & Davis 2..... dry
M. Dodson, Williams & Davis 1..... 12
T. Hinton, Unknown 1..... dry
Dodson No. 2, Peerson & Neeley 1... dry
M. Dodson No. 1, Peerson & Neeley 1 10
Virgil Hinton, Peerson & Neeley 2.... dry
Dodson No. 2, Davis & Co. 2..... dry
Lucy Boucher, Unique Oil 6..... 5
W. C. Carver, Bastrus, Johnson & Miller 5 10
Warren Frost, R. A. McLain 4..... 10
Warren Frost, R. A. McLain 5 4
Straight, B. E. Cutler 1 20
M. Dodson No. 2, Peerson & Neeley 2 dry
Frost, G. C. Foster 1 ..... dry
Hornbuckle, White Plains O. & G. 3.. 288

Wells completed 25
Production 378
Dry 13

WARREN COUNTY

Bowling Green—J. Isabell, Wood Oil 14 3
G. Davenport No. 2, T. A. Sheridan 4 250
Duncan, Western Eng. & Dev. 3.... dry
Smith, Rockfield Oil Co. 9..... 12
Smith, Rockfield Oil Co. 10..... 30
Smith, Rockfield Oil Co. 11..... 40
Morehead, Lucille O. Synd. 5..... 7
A. Reynolds, DaFoe & Co. 5..... 4
Smith Bros., Lowman Bros. 1..... dry
Ben Ford, Roy Hogan 2 33
H. Shannon, J. F. Fort 1..... 35
Bryant, Cunningham & Henry 5..... 20
Cox, Stewart & Bannon 20..... 5
Price, Caskey & Prior 5..... 17

Wells completed 14
Production 456
Dry 2

BARREN COUNTY

Glasgow—Free, Star Oil 3..... 4
Ritchie, Star Oil 10..... 3
Cassiday, T. L. Gorby 1..... 3
Cassiday, T. L. Gorby 2..... 6
G. Lessenberry, T. L. Gorby 2..... 3
Chamberlain, T. L. Gorby 1..... 3
Wynn, Callahan & Wynn 2..... 4
Mack Mansfield, J. G. Esslinger 1... dry
Jones, Baird Oil 1..... 2
Moore, Fred Moore 6..... 10
Jackman, Rice & George 1..... 12
Bishop, Bishop & Son 2..... 4
Oakes, Brendall & Maxey 1..... 5
Matthews, W. S. Raydure 1..... dry
Barton, Lew J. Emery Son 3..... dry
Dick Bridges, Lew J. Emery Son 1.. dry
Chitwood, J. Porter & Co. 2..... dry
J. Church, Wood Oil 2..... dry
B. Martin, J. C. S. Oil Corp. 1..... 3
Wininger, Carter Oil 12..... 6
Goodrum, Carter Oil 3..... 12
L. H. Nichols, Smith & Son 5..... 4
Bradford, Zeigler, Scott & Hue 2.... 4
Hall-Baker, Consolidated Gas 1 23
V. Neeley, Roeder & Stafford 1..... 12

Wells completed 25
Production 123
Dry 6

OWENSBORO DISTRICT

Owensboro—G. M. Burdette, C. E. Daugherty 1..... 3
Eliza Ward, C. E. Daugherty 1.... 2
Gunther, Palmer O. Synd. 1..... dry
Lon Helm, C. A. Leeper 5..... dry
W. S. Howard, Cowling & Co. 1..... dry
Skinner, Kentucky ..... dry
Dave King, Greasy Creek Oil 1..... dry
J. M. Bartley, Wood Oil 1..... 3
Brown, Pellville Oil 3 4

Wells completed 9
Production 11
Dry 5

CUMBERLAND COUNTY

Burkesville—Mrs. Coop, W. S. Raydure 3 300
Mrs. Coop, W. S. Raydure 2..... 5
Mrs. Coop, Kanawha Oil 1..... dry
Gilbert, Grant, Curtis & Co. 1..... dry
Widow Fletcher, Robt. Stead 1..... dry
W. Anderson, W. S. Raydure 1..... dry
J. B. Hume, Judio Dev. 5..... dry

Wells completed 7
Production 305
Dry 5

RUSSELL COUNTY

Greelsboro—J. L. Goodrum, Oldham & Co. 1 9

METCALF COUNTY

Edmonton—L. Ball, T. L. Gorby 1..... dry

SIMPSON COUNTY

Franklin—Smith, W. H. Martin 1..... dry

LOGAN COUNTY

Russellville—Walters, Johnson & Co. 1 dry

OWSLEY COUNTY

Boonville—Elmer Evans, Ben Fleming 1 200
Daniels-Foreman, Henry Oil 1..... 20
Rowland, Marcum & Congleton 1.... 5
T. T. Hale, Unknown 1..... dry

Wells completed 4
Production 225
Dry 1

ELLIOTT COUNTY

Sandy Hook—Robt. Mason, M. Sipple 1 dry
Bret Lewis, Dr. Smith 1..... dry
G. W. Kapples, T. J. Evans 2..... 2
V. O. Davis, Hupp, Duff & Co. 1.... 15

Wells completed 4
Production 17
Dry 2

ADAIR COUNTY

Columbia—Smith, Barlow-Florida Int. 2 dry

ROWAN COUNTY

Morehead—J. D. Caudel, Patton O. & G. 1 30
Unknown, McDonald & McGuire 1.. gas
Kennard, N. E. Kannard 1..... gas
McFolson, McFolson 1..... 30

Wells completed 4
Production 60
Gas 2

BREATHITT COUNTY

Jackson—J. Hurst, Pet. Explo. 4..... gas

LAUREL COUNTY

London—Bernstadt, Common O. & G. 1 dry

FLOYD COUNTY

Hueyville—S. C. Allen, Eastern Carbon Black 7 ..... gas
C. E. Allen, Eastern Carbon Black 1.. dry
John Martin, New Domain O. & G. 1 gas
Wm. Martin, New Domain O. & G. 1.. gas

Wells completed 4
Dry 1
Gas 3

FLEMING COUNTY

Fleminsburg—Pierce, Hawkins & Co. 1 5

MENIFEE COUNTY

Frenchburg—Gillespie, W. O. Buck & Co. 1 10

CLAY COUNTY

Manchester—S. Gabbert, Dolin & Co. 1 dry

BOYD COUNTY

Ashland—Albert Bertram, Unknown 1.. gas

TENNESSEE

CLAY COUNTY

Celina—Ham Lynn, DaFoe & Co. 2....1000
Patterson, Souls & Co. 3..... dry

Wells completed 3
Production 1000
Dry 1

MORGAN COUNTY

Rugby Road—Glenmary, Russell Dev. Co. 1 50

WAYNE COUNTY

Wells Drilling

Monticello—Upchurch, Head, Brown & Co. 4.
John W. Huffaker, Bridgeman Oil 1.
W. S. Asberry, J. H. Fifield & Co. 4.
S. Bryant, A. G. Bryant 2.
Elam, Wright & Bell 1.
T. C. Morrow, Beaver Pet. 7.
John Cooper, Pyle & Abbott 1.
Harman, Spradling & Marsh 2.
Bridgeman, Spaulding & Marsh 3.
Wells drilling, 9.

POWELL COUNTY

Wells Drilling

Slade—W. D. Curtis, Knight & Biemer 1.

ESTILL COUNTY

Well Drilling

Irvine—Sam Miller, Smith, Clark & Co. 2.

WOLFE COUNTY

Wells Drilling

Torrent—Jas. Roberts, Atlantic O. Prod. 2.
Ann Horton, McCombs Prod. & Refg. 9.
E. B. Roberts, Federal O. Corp. 4.
Wells, drilling, 3.

MORGAN COUNTY

Wells Drilling

Cannal City—Elk Fork, Wheeler & Co .1.

LEE COUNTY

Wells Drilling

Beattyville—Huntington, Huntington Oil Synd. 3.
Gourley—McGuire, Black Gum Oil 7.
Spencer-Flannery, Petroleul Explo. 12, 13.
Adaline Porter, Hupp, Duff & Co. 4.
Wells drilling, 5.

LAWRENCE-JOHNSON COUNTIES

Wells Drilling

North Weir—W. D. Lester, Union Gas & Oil 4.
Laura Skaggs, Union Gas & Oil 8.
Caney Sparks, Union Gas & Oil 1.
J. J. Gambill, Union Gas & Oil 35.
Jean Holbrook, No. 1, Union Gas & Oil 3.
L. H. Skaggs, Union Gas & Oil 9.
Wm. Lester, Union Gas & Oil 8.
Foster Ferguson, Union Gas & Oil 2.
C. K. Dobyne, Garrison & Townsend 6.
Ira Lester, W. M. Stone & Co. 7, 8.
J. J. Skaggs, Cumberland Pet. 3.
W. H. Kelly, Mid South Oil 2.
Wayne Moore, Tom Hays 1.
Molt Williams, Central Ky. Gas 4.
C. Osborne, Skaggs, Figley, Day & Co. 5.
J. D. Bond, J. T. Hare & Co. 3.
J. Lyons, Keaton O. & G. 29.
Wells drilling, 19.

JOHNSON-MAGOFFIN COUNTIES

Wells Drilling

South Weir—Eliza Powers, Clyde Oil 6.
Branch Blanton, Mid-South Oil 3.
S. Howard, Mid South Oil 5.
Sam Blanton, Mid South Oil 6.
Jess Adams, Model Oil 2.
Cleveland Salyer, Red Rock Oil 2.
Wm. Flint, Petroleum Explo. 1.
Abe Caudel, Petroleum Explo. 33.
Sam Blanton, R. G. Gillespie 19.
Sam Blanton, R. G. Gillespie, 20.
Sam Blanton, R. G. Gillespie, 21.
Sam Blanton, R. G. Gillespie 22.
Tollie Conley, R. G. Gillespie 6.
J. D. Moore, R. G. Gillespie 3.
Sam Collins, Cumberland Pet. 10.
J. P. Conley, Cumberland Pet. 6.
W. E. Coffey, Superior Oil Corp. 2.
W. M. Prater, Structure Oil 9.
C. C. Meade, C. C. Meade & Co. 1.
F. M. Tackett, Wheeler & Co. 1.
W. P. Adams, Oliver Jenkins 5.
Salyer hrs., Oliver Jenkins 7.
W. P. Adams, New Domain O. & G. 9.
Wells drilling, 23.

ALLEN COUNTY

Wells Drilling

Scottsville—Frank Martin, Dickson & Sledge 5.
Bert Hinton, Frank Seaton 3.
J. E. Meredith, C. K. Boller 2.
Levi Hinton, Pennsylvania Parties 5.
R. T. Williams, F. J. Chipman 4.
W. E. Oliver, Lewis Oil Corp. 2.
J. T. Johnson, O. C. Fletcher 7.
Lucy Boucher, Unique Oil 7.
W. L. Motley, W. R. Thompson & Co. 12.
Clack, Neeley, Lamp & Co. 2.
Younger Tabor, White Plains O. & G. 6.
J. R. Hornbuckle, White Plains O. & G. 4.
Wheat, Peerson, Bastrus & Co. 5.
Walker, Millett & Andrus 6.
Smith, Rice & Co. 1.
B. S. Welch, Work & Co. 3.
Lee Moore, Lee Moore 1.
Kennedy, Unknown 2.
Douglass, Work & Co. 1.
Travelstead, H. A. Kiser 5.
Burton Bros., Russell O. Corp. 15.
Buchanan, C. Guy 7.
Warren Frost, R. A. McLain & Co. 6.
Willoughby, Reed & Smith 1.
Straight, B. E. Cutler 2.
H. W. Heffington, Arthur Dye 1.
Wells drilling, 26.

WARREN COUNTY

Rigs

Bowling Green—Gillespie, H. Z. Clark 5.
Grider Gardner, Ohio Fuel Oil 2.

Wells Drilling

Bowling Green—O. Grimes, Wood Oil 6.
Vance, Illinois-Kentucky Oil 6.
Price-Hall, Ruby Cons. Dev. 5.
Davenport No. 2, T. A. Sheridan 3, 5, 6, 7.
Biddle, Cadet O. & G. 22.
Ben Ford, Roy Hogan 3.
L. C. Dillard, Roy Hogan 3.
W. R. Hutton, P. H. Lavelle 6.
McDonald, D. T. Boiling 1.
J. Perkins, Gipe, Carroll & Christian 1.
H. Shannon, Doak, Wiles & Co. 3.
Jenkins, T. A. Sheridan 1.
Shanks, Amfot O. Corp. 8.
John D. Covington, J. B. Fetty 5.
Lee Butts, Bishop Russell 4.
Dr. Moss, Frank Frirz 6.
Allen Manning, Teague & Co. 1.
Cox, Stewart & Bannon 21.
Smith, Rockfield Oil 12.
Bryant, Cunningham & Henry 6.
Moorehead, Lucille Oil Synd. 6.
Gillespie, Gillespie Oil 9.
Wells drilling, 25.

BARREN COUNTY

Rigs

Glasgow—Taylor, T. L. Gorby 3.

Wells Drilling

Glasgow—Ritter Bros. Stafford & Maxey 1.
Howard, Fred Moore 4.
H. Gassaway, Moore & Baker 2.
Bid Mansfield, J. G. Esslinger Oil 1.
M. Laughlin, Porter & Co. 1.
Burris, Henderson Oil 2.
Ritchie, Star Oil 12, 13.
Stave, Star Oil 4.
Free, Star Oil 4.
Dick Bridges, Lew Emery Sons 2.
Greer, Lew Emery Sons 1.
Harston, Lew Emery Sons 25.
John Church, Wood Oil 1.
Goodwin, Carter Oil 4.
Jesse Wininger, Carter Oil 1.
Wm. Church, Wood Oil 3.
Hutchinson, Jordon & Co. 1.
Neeley, Mazel Oil 5.
Hall Baker, Consolidated Gas 2.
C. Bradford, Consolidated Gas 1.
Oakes, Brendall & Co. 2.
Duff, Horace Coombs 3.
G. Lessenberry, T. L. Gorby 3.
Cassiday, T. L. Gorby 3.
Geo. Dossey, Nelson & Co. 1.
Jenkins, Brewer & Co. 1.
Settle, Stafford & Co. 1.
Price hrs., Roederer & Co. 1.
Childress, Mazel Oil 6.
Bishop, Bishop & Son 3.
Wells drilling, 31.

OWENSBORO DISTRICT

Wells Drilling

Owensboro—F. B. Miller, C. E. Daugherty 1.
J. P. Howard, C. E. Daugherty 1.
O. G. Ward, C. E. Daugherty 1.
J. L. & A. T. Casey, Ike N. Harkless 5.
Dick Spurrier, Ike N. Harkless 2.
Tom Jackson, St. Louis parties 3.
Jesse Swope, Nutty & Pyle 1.
Brown, Pellville Oil 4.
R. M. Miller, Panther Creek Oil 11.
Casenberry, Kentucky Oil 1.
Rigs, 0; wells drilling, 10; total, 10.

CUMBERLAND COUNTY

Wells Drilling

Burkesville—M. Scott, Coe & Co. 1.
Kin Crawford, Dayton O. Synd. 4.
Coffee, Young Oil 3.
Doll Bales, Webber Oil 1.
Cary, W. S. Raydure 1.
Logan, E. N. Ahlfeldt 3.
Sharp, Wilcox Bros. 1.
Link, Lee Tomlinson 1.
Davidson, Wilcox Brothers 1.
Rush, Unknown 1.
Love Coe, West & Co. 1.
Rigs, 0; wells drilling, 11; total, 11.

RUSSELL COUNTY

Wells Drilling

Creelsboro—A. O. Lay, Redman & Co. 1.
Nellie Bledson, Creelsboro parties 1.
B. F. Lee, Carnahan Oil 4.
Rigs, 0; wells drilling, 3; total, 3.

METCALF COUNTY

Wells Drilling

Edmonton—Near Edmonton, J. C. Richards 1.
A. J. Thompson, T. Petty & Co. 1.
L. H. Thompson, Hartramp & Co. 1.
Rigs, 0; wells drilling, 3; total, 3.

SIMPSON COUNTY

Rigs

Franklin—Summers, E. M. Treat & Co. 12.

LOGAN COUNTY

Wells Drilling

Russellville—Walters, SW 50, Stewart & Co. 1.
Walters, W 40, Foster & Co. 1.
Rigs, 0; wells drilling, 2; total, 2.

OWSLEY COUNTY

Wells Drilling

Boonville—Elmer Evans, Combs Bros. Drg. 4.
Strut Treadway, Hisey & Co. 1.
M. Rowland, H. A. Randall 1.
Addison, Ed. Riggenbarton 1.
Rigs, 0; wells drilling, 4; total, 4.

ELLIOTT COUNTY

Wells Drilling

Sandy Hook—G. W. Kelley, McConnell & Co. 1.

J. F. Dials, Wheeler & Campbell 3.
Rigs, 0; wells drilling, 2; total, 2.

ROWAN COUNTY
Wells Drilling
Morehead—Near Morehead, McDonald & McGuire 2.
Mt. Hope, McKinney Brothers 1.
Rigs, 0; wells drilling, 2; total, 2.

LAUREL COUNTY
Wells Drilling
London—Mrs. Hubbard, Piney O. & G. 1.

PIKE COUNTY
Wells Drilling
Pikeville—Pond Creek Coal, A. J. Dalton & Co. 1.

HARLAN COUNTY
Rigs
Harlan—Cawood, Rex G. Carpenter 1.

BELL COUNTY
Wells Drilling
Middlesboro—Canada Peak, Canada Peak Oil 1.

MADISON COUNTY
Wells Drilling
Boonsboro Beach—S. J. Williams, J. N. Thompson & Co. 1.

FLOYD COUNTY
Rigs
Hueyville—C. D. Patrick, Carter Oil 1.
Wells Drilling
Hueyville—Ky. River Coal, Brown & Harmon 1.
Rigs, 1; wells drilling, 1; total, 2.

FLEMING COUNTY
Wells Drilling
Flemingsburg—Unknown, Dr. Commelly 1.

MARTIN COUNTY
Wells Drilling
Inez—Alfred Carter, Big Darby O. & G. 1.

CLAY COUNTY
Wells Drilling
Manchester—Mowbray-Robinson, Petroleum Exploration 1.
Unknown—Standard Oil of Kentucky 1.
Rigs, 0; wells drilling, 2; total, 2.

BOYD COUNTY
Wells Drilling
Ashland—Albert Bertram, Unknown 2.

TENNESSEE

CLAY COUNTY
Wells Drilling
Celina—Ham Lynn, DaFoe & Co. 1, 3.
Greenwood, Souls & Co. 2.
Stanford, Dixon & Co. 2.
Short, Powell Oil 3.
Stover, Alexander & Co. 2.
Unknown, Spain & Co. 2.
Rigs, 0; wells drilling, 7; total, 7.

SUMNER COUNTY
Wells Drilling
Gallatine—Stewart-Terrell, T. A. Sims 1.
Unknown, E. A. Oliver Synd. 1.
Rigs, 0; wells drilling, 2; total, 2.

OVERTON COUNTY
Wells Drilling
Mitchell Creek—Boswell & Co. 1.

JACKSON COUNTY
Wells Drilling
Jackson—Howard, Continental Oil 2.

GIBSON COUNTY
Wells Drilling
Dyer—Dyer O. & G. 1.

HARDEMAN COUNTY
Wells Drilling
Bolivar—Brown Sans, Spring Valley O. & G. 1.

FAYETTE COUNTY
Rigs
Sommerville—Perry, Strickland & Co. 1.

SHELBY COUNTY
Wells Drilling
Arlington—Garrett, Arlington O. & G. 2.

BENTON COUNTY
Wells Drilling
Near Camden—Unknown 1.
Near Eva, Clarksville O. & G. 1.
Rigs, 0; wells drilling, 2; total, 2.

HAMILTON COUNTY
Rigs
Chattanooga—Near Daisy, Dryden & Co. 1.

MURRAY COUNTY
Wells Drilling
Hampshire—McClanahan, Dr. Doren 1.

RHEA COUNTY
Wells Drilling
Dayton—Unknown Parties 1.

DAVIDSON COUNTY
Wells Drilling
Nashville—Stevens, Oliver & Lindsay 1.

MISSISSIPPI

CHICKASAW COUNTY
Wells Drilling
Houston—Flairty, Danner G. & O. Trust 2.

CLAY COUNTY
Rigs
West Point—Gulf Development 1.

PIKE COUNTY
Rigs
Magnolia—Poorhouse, Mississippi Exploration 2.

UNION COUNTY
Rigs
Wallersville—Sappington, Minyard Wells 1.
Wells Drilling
Wallersville—Woodson, Minyard Wells 1.
Rigs, 1; wells drilling, 1; total, 2.

FRANKLIN COUNTY
Wells Drilling
Jackson—McCabe, Fletchering & Co. 1.

COPIAH COUNTY
Wells Drilling
Section 6-2-1—Didlake, Marshall Oil 1.
Section 23-1-3—White, B. H. White 2.
Rigs, 0; wells drilling, 2; total, 2.

HINDS COUNTY
Wells Drilling
Elton—Jackson Oil 2.

JEFFERSON COUNTY
Wells Drilling
Truly—Truly, Manhattan-Tex. Pet. 2.

JACKSON COUNTY
Wells Drilling
Pascagoula—Near Utica, Jackson Oil 1.

LAFAYETTE COUNTY
Wells Drilling
Oxford—Section 27-11-4, Banks, Kinsey & Co. 1.

LOWNDES COUNTY
Section 12-8-1, Near Artesia—Billups, Anderson Drilling 1.

LINCOLN COUNTY
Wells Drilling
Near Hartman—Anderson Drg. 1.

WASHINGTON COUNTY
Wells Drilling
Williams—Alhambra Oil 3.

ITAWAMBA COUNTY
Section 7-10-9—Summers, Stenum & Co. 1.

CALHOUN COUNTY
Rigs
Calhoun City—Gregory, Northeast O. & G. 1

LEAKE COUNTY
Wells Drilling
Carthage—Near Conway, Charles B. Still 1.

MADISON COUNTY
Wells Drilling
Section 7-10-4—Madison O. & G. 1.

GRANADA COUNTY
Granada—Borden & Co. 1.

CLAIBORNE COUNTY
Rigs
Port Gibson—Young, Mississippi Exploration 1.

HOLMES COUNTY
Rigs
Section 18-13-1—Near Coxburg, Free Run Oil 1.

PANOLA COUNTY
Wells Drilling
Section 15-37-2—Klihni, Courtland O. & G. 1.

PERRY COUNTY
Wells Drilling
Richton—Donald, Donald Oil 1.

RANKINS COUNTY
Wells Drilling
Section 7-3-4—Finbone Oil 1.

SCOTT COUNTY
Wells Drilling
Section 21-6-3—Graham, Mississippi O. & G. Syndicate 1.

ALABAMA

MORGAN COUNTY
Wells Drilling
Section 6-6-1—English, Albany-Decatur Oil 1.

BALDWIN COUNTY
Wells Drilling
Section 21-2-2—Evans, Stoll & Co. 1.

SUMTER COUNTY
Cartopa—Sam W. Kendall 1.

HALE COUNTY
Greensborough—Hale Oil 1.

READ THE

Classified Wants

Pages 134-135

DO IT NOW
YOU MAY MISS A BARGAIN

SHELBY COUNTY
Wells Drilling
Chelsea—Scott, Cooksey Oil 1.

WILCOX COUNTY
Wells Drilling
Selma—Blue Bell Oil 1.

CLARK COUNTY
Wells Drilling
Section 35-8-1—Orgus, Keoughan Oil 1.
Columbia—Inter-Coastal Oil 1.
Rigs, 0; wells drilling, 2; total, 2.

MADISON COUNTY
Wells Drilling
Huntsville—T. H. Mahoney 1.

COLBERT COUNTY
Wells Drilling
Sheffield—Ligon, Spring Valley O. & G. 1.

LAWRENCE COUNTY
Wells Drilling
Near Moulton—Tulsa parties 1.

GEORGIA

PULASKI COUNTY
Rigs
Hawkensville—Florida-Georgia Cons. Oil 1.

JEFF DAVIS COUNTY
Wells Drilling
Hazelhurst—Mid-Georgia O. & G. 1.

TELFAIR COUNTY
Wells Drilling
Scotland—Telfair Oil 1.

BURKE COUNTY
Wells Drilling
Green Cut—Three Creeks Oil 1.

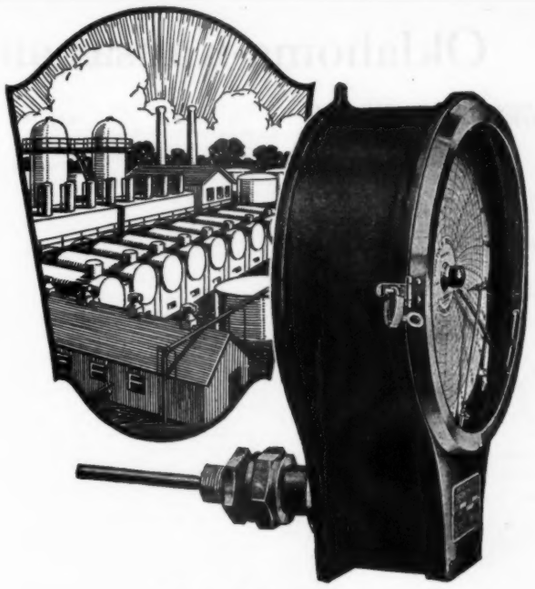
WHITEFIELD COUNTY
Wells Drilling
Dalton—Richardson O. & G. 1.

MEXICAN SEPTEMBER OUTPUT

Production of petroleum in Mexico during September is officially placed at 10,034,000 bbls., compared with 11,770,000 bbls. in the preceding month. The daily average output declined from 380,000 bbls. to 334,000, due to torrential rains, causing many inundations. La Corona Petroleum Co. (Royal Dutch) produced 350,000 cubic meters (2,201,000 bbls.) in September, Mexican Seaboard 220,000 cubic meters (1,384,000 bbls.) and Standard Oil Co. of New Jersey 160,000 cubic meters (1,006,000 bbls.)

GRANTED TEXAS PERMIT

AUSTIN, Tex., Dec. 6.—The Louisiana Oil Refining Co., with headquarters at Richmond, Va., and a capital stock of $15,000,000, has been admitted to transact business in Texas. Texas headquarters will be maintained at Fort Worth. Ellis Douthit is named as State agent.



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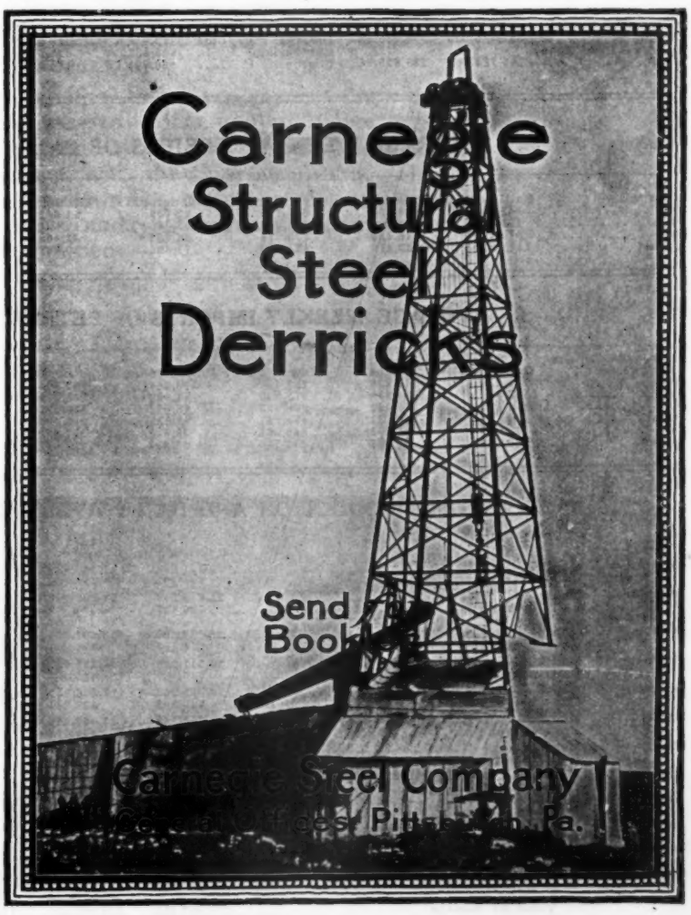


Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE REPORT FOR OCTOBER

Runs

	Month	Dy. Av.
*Prairie P. L. Co.	3,410,000	110,000
Gulf P. L. Co.	1,057,356	34,108
Texas P. L. Co.	482,473	15,564
Magnolia Pet. Co.	1,296,278	41,815
Empire P. L. Co.	858,555	27,695
Cosden P. L. Co.	780,226	25,169
*Sinclair P. L. Co.	1,688,477	54,467
*Other lines	9,052,000	292,000
Total October	18,625,365	600,818
Total September	18,667,071	622,235
Difference	31,706	21,417

Shipments

†Prairie P. L. Co.	3,239,593	104,503
Gulf P. L. Co.	1,119,591	36,116
Texas P. L. Co.	906,697	29,245
Magnolia Pet. Co.	1,170,086	37,745
Empire P. L. Co.	903,016	29,130
Cosden P. L. Co.	840,177	27,102
†Sinclair P. L. Co.	2,251,056	72,615
*Other lines	8,866,000	286,000
Total October	19,296,116	622,456
Total September	17,949,510	598,317
Difference	1,246,606	14,139

Stocks

*Prairie Oil & Gas Co.	26,600,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co.	9,707,279
The Texas Co.	5,887,648
Magnolia Petroleum Co.	9,489,606
Empire Pipe Line Co.	3,118,795
Cosden Pipe Line Co.	2,895,796
*Sinclair Crude Oil Purchasing Co.	29,350,000
Carter Oil Co.	17,774,386
*Other lines	10,600,000
Total October	117,423,510
Total September	117,616,834
Difference	193,324

*Estimated.
†Prairie Pipe Line shipments include shipments of Texas crude oil. Sinclair Pipe Line shipments include Texas and Wyoming
Note: Stocks do not include approximately 9,000,000 bbls. of crude oil held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept.'24	Oct.'24
National Transit..	182,088.41	199,575.25
S. W. Pa. P. L..	78,895.56	90,883.89
Eureka P. L.	351,485.53	396,959.58
Buckeye Pipe Line (Macksburg) ...	266,724.36	288,639.76
Buckeye Pipe Line (Cleveland)	14,345.30	15,068.52
Buckeye Pipe Line (Lima, etc.)	137,043.37	145,493.29
Indiana Pipe Line..	13,098.14	13,732.04
Cumberland P. L..	343,759.39	353,376.22
New York Transit	17,950.12	19,341.15
Tide Water P. L...	148,166.41	145,975.11
Pure Oil Pipe Line	189,939.55	193,849.91
Emery Pipe Line..	39,983.11	43,225.22
Indian Refining ...	58,273.83	62,081.48
Paragon Dev.....	39,270.91	37,082.21
Pittsburgh P. L. ..	6,874.72	8,975.04
Total	1,887,898.71	2,014,258.67
Daily average...	62,929.96	64,976.08

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept.'24	Oct.'24
National Transit...	326,398.90	316,814.05
S. W. Pa. P. L....	314,914.21	314,257.16
Eureka Pipe Line..	164,748.30	172,363.77
Buckeye Pipe Line (Macksburg) ...	88,058.06	100,388.72
Buckeye Pipe Line (Cleveland	1,214.51	1,402.46
Buckeye Pipe Line (Lima, etc.)	532,150.99	400,601.18
Indiana Pipe Line..	750,599.95	775,886.48
Cumberland P. L...	132,518.69	121,292.74
Southern P. L.	.....	.....
Crescent Pipe Line.	.....	.....
New York Transit.	437,758.87	521,646.52
Northern Pipe Line	125,166.94	136,838.32
Tide Water P. L...	125,057.78	156,746.09
Pure Oil Pipe Line.	229,439.68	144,366.46
Emery Pipe Line..	41,884.28	42,307.10
Paragon Refining..	68,348.08	93,965.35
Indian Refining ...	433,576.20	477,162.81
Paragon Dev.	36,936.44	31,059.70
Pittsburgh P. L...	10,978.98	11,164.71
Total	3,819,750.86	3,818,263.62
Daily average ..	127,325.03	123,169.79

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept.. '24	Oct. '24
National Transit..	961,508.69	1,058,840.27
S. W. Pa. P. L...	724,341.53	699,926.45
Eureka P. L. ...	1,697,079.59	1,884,227.94
Buckeye Pipe Line (Macksburg) ..	352,911.42	407,451.51
Buckeye Pipe Line (Cleveland) ...	46,294.83	53,051.25
Buckeye Pipe Line (Lima, etc.) ..	4,175,978.70	4,474,343.57
Indiana Pipe Line	679,016.62	643,838.15
Cumberland P. L.	605,423.66	623,817.30
Southern P. L...	630,608.67	454,510.66
Crescent P. L. ..	58,433.71	58,247.53
N. Y. Transit ...	763,797.71	799,719.98
Northern P. L. ..	914,613.78	863,572.00
Tide Water P. L.	.....	.....
Pure Oil P. L...	328,576.77	371,998.94
Emery P. L.	6,003.80	7,444.98
Paragon Ref. ...	79,035.93	90,298.77
Indian Ref.	168,875.27	157,931.51
Paragon Dev. ...	10,287.89	8,649.08
Pittsburgh P. L..	4,047.30	6,180.28
Total	12,206,835.87	12,664,061.12
Increase	.....	457,225.25
Decrease	14,839.68	

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of September and October, showing the gross stocks of the above fields:

	Sept. '24	Oct. '24
Pennsylvania	3,707,179.82	3,930,646.58
Lima	1,317,819.86	1,326,652.80
Kentucky	1,522,433.32	1,482,174.97
Mid-Continent ...	5,592,672.05	5,808,670.66
Illinois	66,730.82	116,916.11
Total	12,206,835.87	12,664,061.12

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
January	64,460	67,702	75,790	62,638
February	70,054	75,096	71,093	68,023
March	68,555	78,531	76,592	68,721
April	65,036	75,462	75,614	71,058
May	65,466	77,592	77,365	63,942
June	62,438	76,193	77,593	63,230
July	59,486	76,435	71,879	64,208
August	64,888	79,387	76,910	59,942
September ..	60,110	78,512	72,358	62,930
October	57,688	77,209	76,256	64,976
November ..	58,470	75,313	70,762	.....
December ...	61,000	73,351	69,271	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1921	1922	1923	1924
January ..	115,550	119,792	171,067	145,518
February .	96,736	111,362	164,219	148,732
March	84,168	127,753	185,487	147,098
April	101,015	127,068	170,751	147,611
May	100,253	127,840	177,102	134,997
June	105,037	137,638	173,598	143,010
July	97,096	137,872	168,330	124,187
August	101,652	153,275	142,766	123,120
September	117,440	158,761	137,266	127,325
October ...	120,178	165,345	134,597	123,170
November	121,803	165,677	131,426	.....
December	104,023	172,861	139,909	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1922	1923	1924
January ...	16,297,858	14,040,567	12,907,202
February ..	17,009,293	14,028,437	11,844,068
March	16,877,937	13,873,146	10,906,752
April	16,777,842	13,737,575	10,932,742
May	16,948,962	13,815,622	11,335,309
June	16,810,169	14,541,253	11,544,204
July	16,660,286	14,645,584	12,062,361
August	16,235,229	14,770,539	13,221,676
Sept.	16,228,545	14,803,444	12,206,836
October ...	15,757,746	14,504,111	12,664,061
Nov.	15,171,972	14,157,726	.....
December ..	14,323,765	13,444,361	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1932—	Receipts	Shipments	Stocks
October	2,694.23	5,261.81	17,334.78
November	2,980.66	4,150.98	16,154.47
December	2,893.07	3,499.27	15,548.27
1924—			
January	2,942.19	8,641.71	9,343.75
February	2,151.78	1,926.55	10,073.98
March	3,398.78	1,716.28	11,756.48
April	3,311.84	2,066.78	13,001.54
May	3,036.50	5,338.31	10,699.93
June	3,188.81	407.01	13,481.13
July	3,067.74	3,334.29	13,214.58
August	2,901.36	6.21	16,109.73
September	2,794.58	5,775.89	13,128.42
October	3,342.40	1,880.50	14,590.32

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1	2,279,684.60
Runs from wells	711,272.69
Other receipts	120,129.93
Regular deliveries	502,072.21
Other deliveries	276,776.55

The amount of Illinois oil run by the Tidewater Pipe Line Co. in October was 30,494.73 bbls.. and deliveries were 40,791.56 bbls. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

1923—	Runs	Deliveries
October	576,867.09	347,812.93
November	546,859.43	285,692.09
December	534,185.04	282,542.43
1924—		
January	493,337.25	280,732.69
February	535,490.70	353,613.54
March	611,289.36	369,542.51
April	514,356.43	339,546.10
May	751,080.44	510,414.43
June	725,060.87	528,403.38
July	759,646.84	552,386.50
August	720,457.72	519,135.79
September	714,875.36	535,750.00
October	741,767.42	543,163.77

The Tidewater Pipe Co., Ltd., also delivered in October 244,660.26 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 442,197.91 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

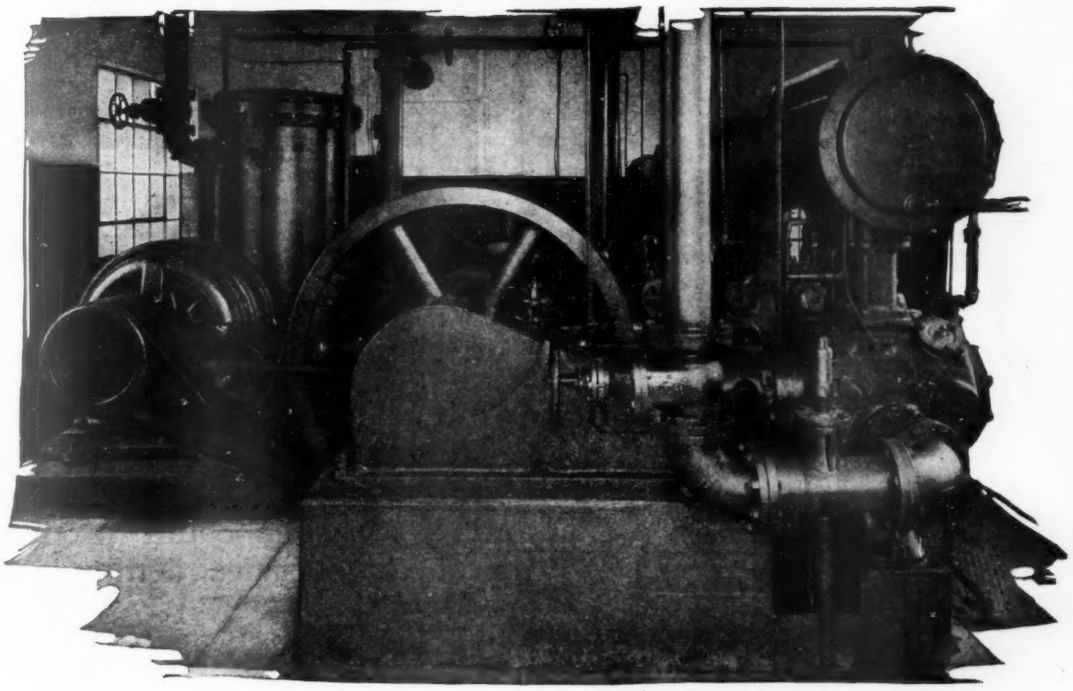
Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	All Ports
May	42,903	33,194	615,709	92,706	61,642	846,154	.....	70,127	.....	.....	70,127	916,281
June	121,800	34,200	581,000	103,369	51,331	891,800	.....	.....	.....	.....	.....	891,800
July	37,710	16,129	473,516	84,452	42,452	654,249	.....	16,936	.....	.....	.....	671,185
August	114,032	33,419	654,387	71,806	33,871	907,515	907,515	.....	6,774	.....	.....	914,289

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	All Ports
March	148,358	141,806	283,458	124,642	292,642	990,906	463,806	365,358	223,552	55,545	1,108,261	2,099,167
April	152,369	154,931	913,900	94,962	248,969	971,131	382,900	348,131	119,000	15,869	865,900	1,837,031
May	156,485	134,602	288,903	59,612	300,097	939,699	315,679	295,358	199,591	38,164	848,792	1,788,491
June	120,169	106,731	434,931	68,131	239,400	971,362	412,741	261,762	169,821	83,831	858,165	1,829,527
July	62,097	81,291	445,067	38,418	277,970	904,843	320,194	273,455	130,739	34,973	759,361	1,666,204
August	80,839	57,356	247,710	98,903	207,065	691,872	370,549	238,677	115,839	14,677	739,742	1,431,614

GROSS PRODUCTION AND DAILY AVERAGE IN THE UNITED STATES FOR 12 MONTHS

1923—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming-Montana	Other Fields	Total
November:	Month	22,397,848	12,334,620	15,556,507	2,268,840	2,973,000	1,816,860	4,792,466	3,138,464	65,278,606
	Daily average	746,595	411,154	518,550	75,628	99,100	60,562	159,782	104,615	2,175,969
December:	Month	21,899,247	12,232,259	10,065,856	2,345,150	4,017,850	1,919,574	3,304,326	3,147,812	58,932,074
	Daily average	706,427	394,589	324,705	75,650	129,608	61,922	106,591	101,542	1,901,084
1924—										
January:	Month	20,912,500	12,292,833	10,336,643	2,233,878	3,686,680	1,601,175	4,636,230	2,950,500	58,640,439
	Daily average	674,597	396,543	333,449	71,738	118,925	51,651	149,556	95,177	1,891,627
February:	Month	19,341,226	12,236,637	10,495,486	2,112,853	3,302,750	1,497,450	4,168,450	2,997,700	56,152,553
	Daily average	666,939	421,953	361,913	72,857	113,888	51,629	143,740	103,369	1,936,296
March:	Month	19,913,262	13,336,851	12,077,617	2,206,425	3,882,695	1,701,593	3,993,890	3,258,000	60,370,328
	Daily average	642,363	430,221	389,601	71,175	125,248	54,890	128,835	105,097	1,947,430
April:	Month	19,299,849	13,452,240	11,726,830	2,265,090	4,068,225	1,495,582	3,901,755	3,231,000	59,439,571
	Daily average	643,328	448,408	390,861	75,503	135,608	49,853	130,058	107,700	1,981,319
May:	Month	19,833,576	14,248,057	11,923,316	2,486,696	4,659,117	1,596,701	4,033,564	3,355,000	62,136,027
	Daily average	639,793	459,615	384,623	80,216	150,291	51,507	130,109	108,226	2,004,065
June:	Month	18,807,999	14,457,390	11,515,020	2,473,320	4,756,443	1,811,880	3,798,634	3,211,500	60,832,186
	Daily average	626,933	481,913	383,834	82,444	158,548	60,419	126,621	107,050	2,027,739
July:	Month	19,274,755	15,191,860	11,820,889	2,678,834	4,598,160	1,931,641	3,728,525	3,387,990	63,612,654
	Daily average	621,766	490,050	381,319	86,414	148,321	62,311	120,275	109,290	2,019,796
August:	Month	19,112,998	16,572,104	11,805,753	2,717,398	4,400,116	1,898,246	3,816,627	3,260,017	63,603,259
	Daily average	616,548	534,584	380,831	87,658	141,810	61,234	123,117	105,807	2,051,718
September:	Month	18,308,233	16,299,030	10,670,640	2,688,690	4,022,025	1,811,985	3,427,455	3,305,700	60,533,758
	Daily average	610,274	543,301	355,688	89,623	134,068	60,996	114,249	110,190	2,017,792
October:	Month	18,696,565	16,153,804	10,985,315	2,769,519	3,875,558	1,878,941	3,053,810	3,472,031	60,885,643
	Daily average	603,115	521,084	354,365	89,349	125,018	60,611	98,510	112,001	1,964,053
	Total 12 months	237,807,058	168,807,485	138,978,872	29,236,985	48,242,619	20,961,628	46,655,732	38,735,714	729,417,101
	Daily average	649,746	461,223	379,724	79,612	131,810	54,540	127,475	105,808	1,992,948



Flow and Ebb of the Business Tide

DURING the flow of a business tide, maximum production enables the operation of out-of-date equipment without a loss while the modern tools build up the profits making a fairly satisfactory average.

When the ebb tide is on only modern equipment can be operated.

CP Air Compressors are all modern and operate economically under full or partial loads, consequently they are a profitable investment on either the flow or ebb tide of business.

Whether or not you possess the vision to forecast the tide, you will never err in judgment when you install The Compressor with the Simplate Valve. They are made in five hundred types and sizes—a size and type for every air compressor requirement.

Bulletins upon request.

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GIANT OIL AND GAS ENGINES — ROCK DRILLS · · COAL DRILLS

CHICAGO *Depend upon* **PNEUMATIC** *that Name*

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the postoffice at Tulsa, Okla., under the Act of March 3, 1879.

"SS" Nows
Super-S
SS-40+S

FOR a long, long time everybody thought SS-40 and SS-124 were just about as good drilling chains as skill and experience could produce. They met heavy service demands and high speeds.

Then the strenuous demands of *Super-speeds* and *Super-strains* dictated the need for *Super-Chains*.

Our designers were told to out-do their own records. Markets were scoured for raw materials. The need existed, Link-Belt must produce.

Tests now prove that—

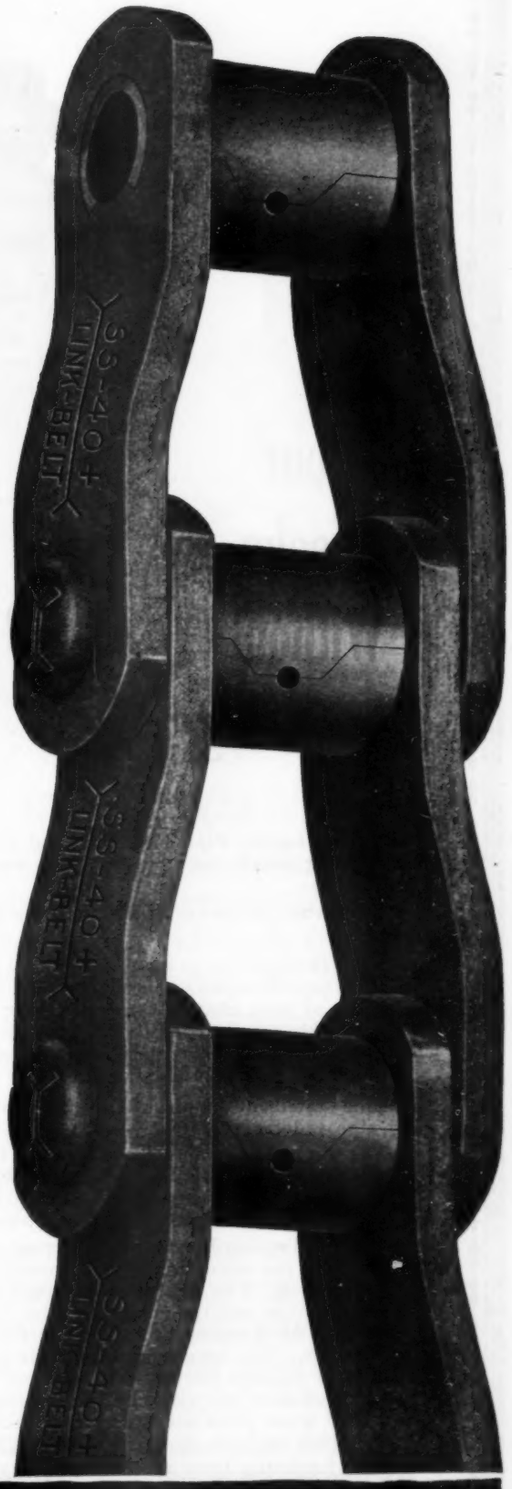
SS-40 PLUS– a genuine super-chain– fears no speeds at which a rig is run, as it contains 60% more strength than our famous SS-40.

Link-Belt Chain ⟩—⟨ Mark.
Look for it on every link

SS 40+ LINK-BELTS

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the postoffice at Tulsa, Okla., under the Act of March 3, 1879.

wStands For r-Service +SS-124+



And SS-124 PLUS is 73% stronger than SS-124.

Tests prove that designing skill of the best—experience of the longest—especially selected materials, and unusual heat treating—have given us chains of record strength *without increase in weight.*

These newest, most rugged of chains are no heavier than the famous SS-40 and SS-124—but boast great increases in reserve strength.

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You asked for super-chain. SS-40 PLUS and SS-124 PLUS furnish the answer; *in practice as well as in print.*

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Leading manufacturers of Elevating, Conveying and Power Transmission Chains

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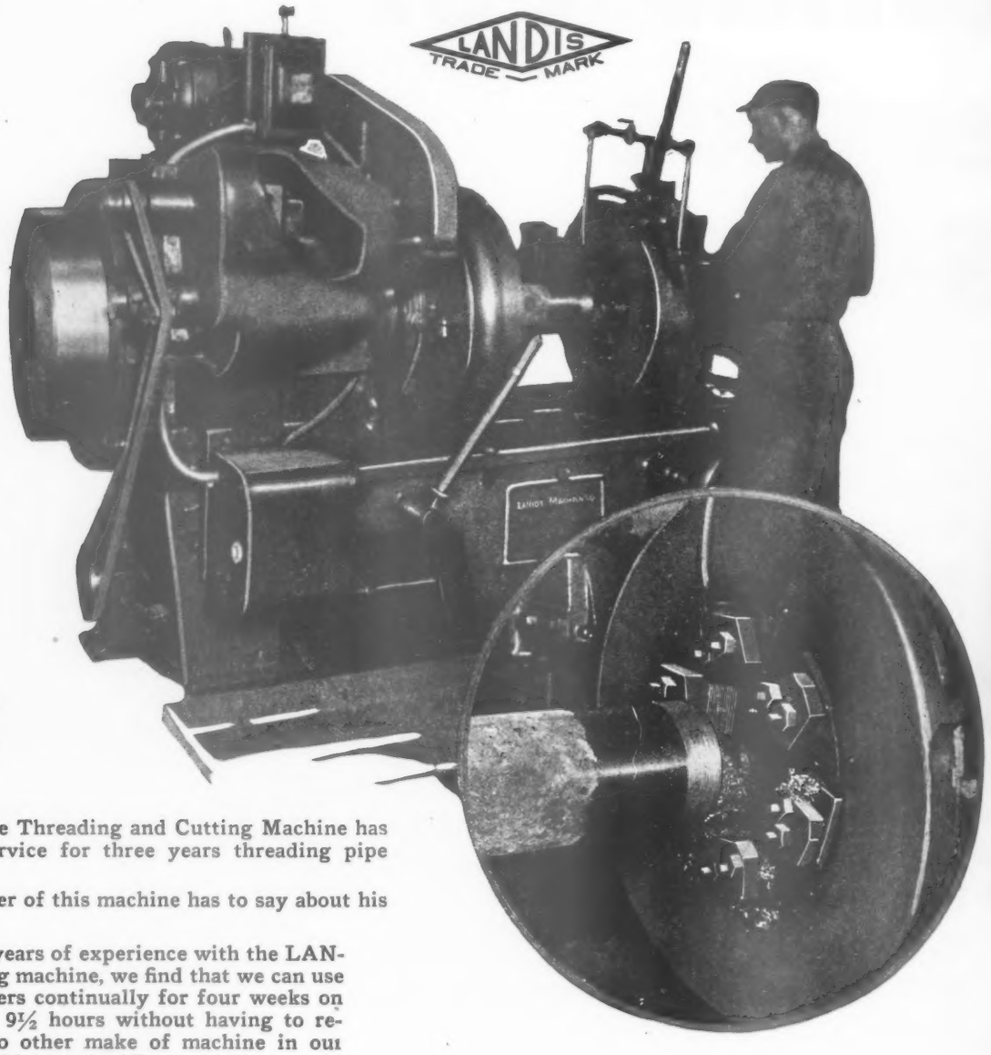
SPROCKET CHAIN SS 124+

Four Weeks Without Regrinding



This 6" Landis Pipe Threading and Cutting Machine has been doing steady service for three years threading pipe and casing.

Read what the owner of this machine has to say about his Landis:

> **"Through our years of experience with the LANDIS pipe threading machine, we find that we can use a set of your chasers continually for four weeks on a working day of 9½ hours without having to resharpen same. No other make of machine in our shop has reached this standard."**

This statement should bear weight with any one threading pipe and casing.

The simplicity and convenience of LANDIS machines make them ideal equipment where unskilled help is used. They can be run efficiently all day without fatiguing the operators. They cut accurate, clean threads, always.

The distinctive Landis chaser is of course responsible in part for the exceptional performance of Landis Heads and Machines. The variable rake angle permits the chaser to be ground to suit the material. The line contact between chaser and stock means a minimum of friction and high cutting speeds. The long life and simple grinding feature of the chaser insures low upkeep cost and profitable threads. A set of chasers will thread any diameter within the range of a head when pitch and taper of thread are the same.

Consider these features. Then let us tell you about the famous LANDIS Line of Threading Machines, Die Heads, Pipe Threading and Cutting Machines, etc.

LANDIS Pipe Threading Machine

LANDIS MACHINE COMPANY, Waynesboro, Pa.

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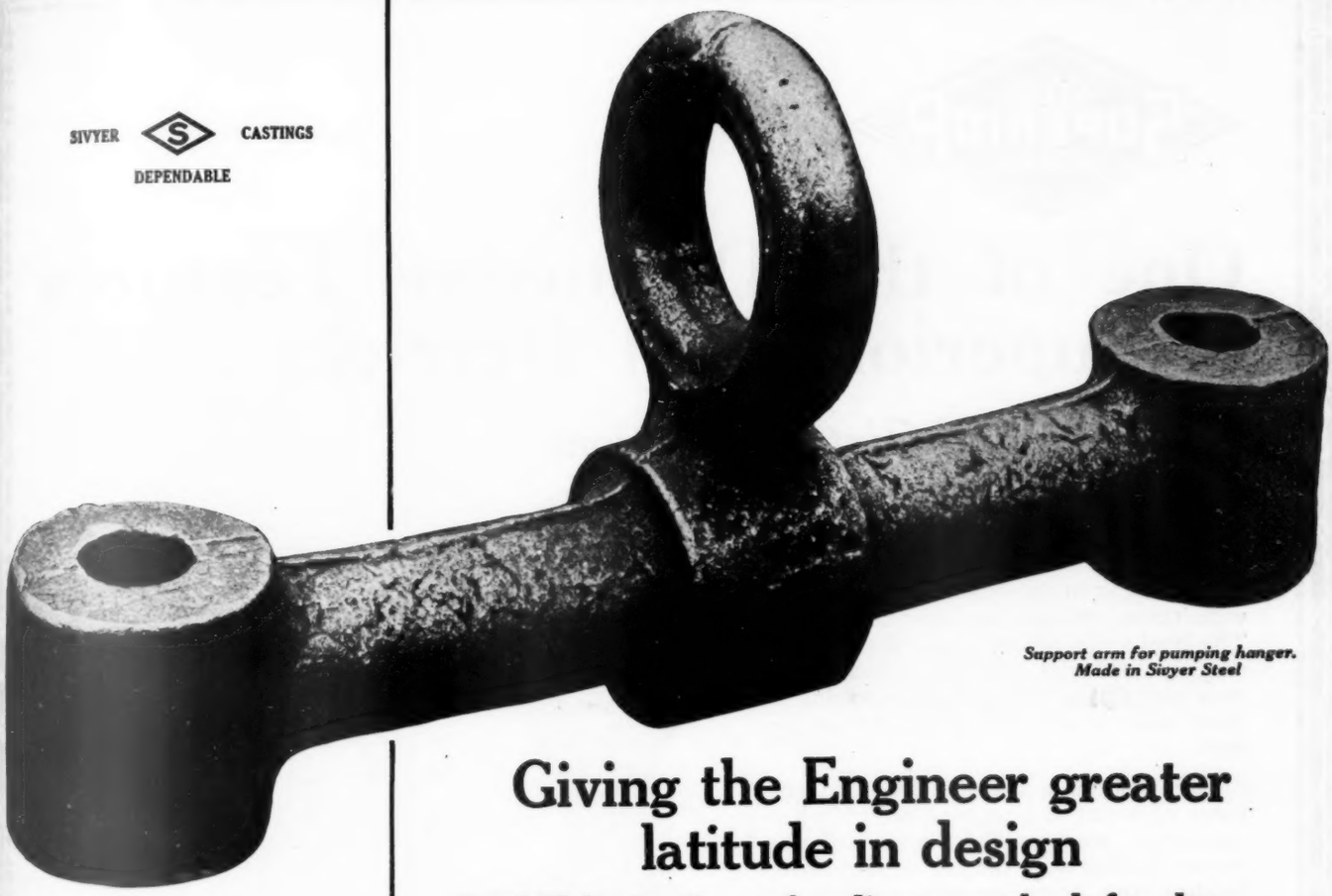
SIVYER CASTINGS
DEPENDABLE



Support arm for pumping hanger. Made in Sivyer Steel

Giving the Engineer greater latitude in design

THE limitations of ordinary methods for shaping steel often impose severe restrictions on the designer of new and improved tools for the oil fields. The unusual adaptability of Sivyer Electric Steel and Sivyer foundry practice frequently remove these restrictions completely and at a noteworthy saving in final cost. The support arm for a pumping hanger shown above illustrates both the freedom and the saving that Sivyer Steel and methods make possible for the engineer. If the part were made from a forging it would be impractical to have the ring handle at right angles to the body—an especially desirable factor in this case. A forging would also necessitate expensive machine work. The Sivyer casting therefore represents a considerable saving in production costs as well as a more efficient unit.

Send Blue Prints of Parts Difficult to Forge

The support arm shown here is one of many parts illustrating how Sivyer Castings are being utilized in making new and improved tools for the oil industry—and also for making established designs in better and more efficient ways.

With Sivyer Electric Steel the expense of such parts can often be greatly reduced and their strength and toughness materially increased.

During the last seven years, many manufacturers who were having difficulty with forged parts—or with ordinary steel castings—have come to us for a solution of their difficulties. In many cases we have been able to suggest solutions for their problems that did away with hot welding and expensive machining that forgings often make necessary.

Very often, of course, the manufacturer's problems arise from the shortcomings of ordinary cast steel. When certain sections of a design vary sharply in thickness, it is difficult to cast them in ordinary steel. Open hearth practice does not permit the high temperature necessary for pouring extremely thin sections of intricate design.

With Sivyer Electric Steel and with Siver developments of molding practice, many things can be done that are impossible to open hearth steel.

If you are having trouble with parts that in the past have been hammer forged, or cast in ordinary steel, send us your blue prints together with statement of your difficulties. We will be glad to study the problems involved and recommend possible solutions, without obligation on your part.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

STEEL SUPERIOR DERRICK

One of the Distinctive Features of Superior Steel Derricks

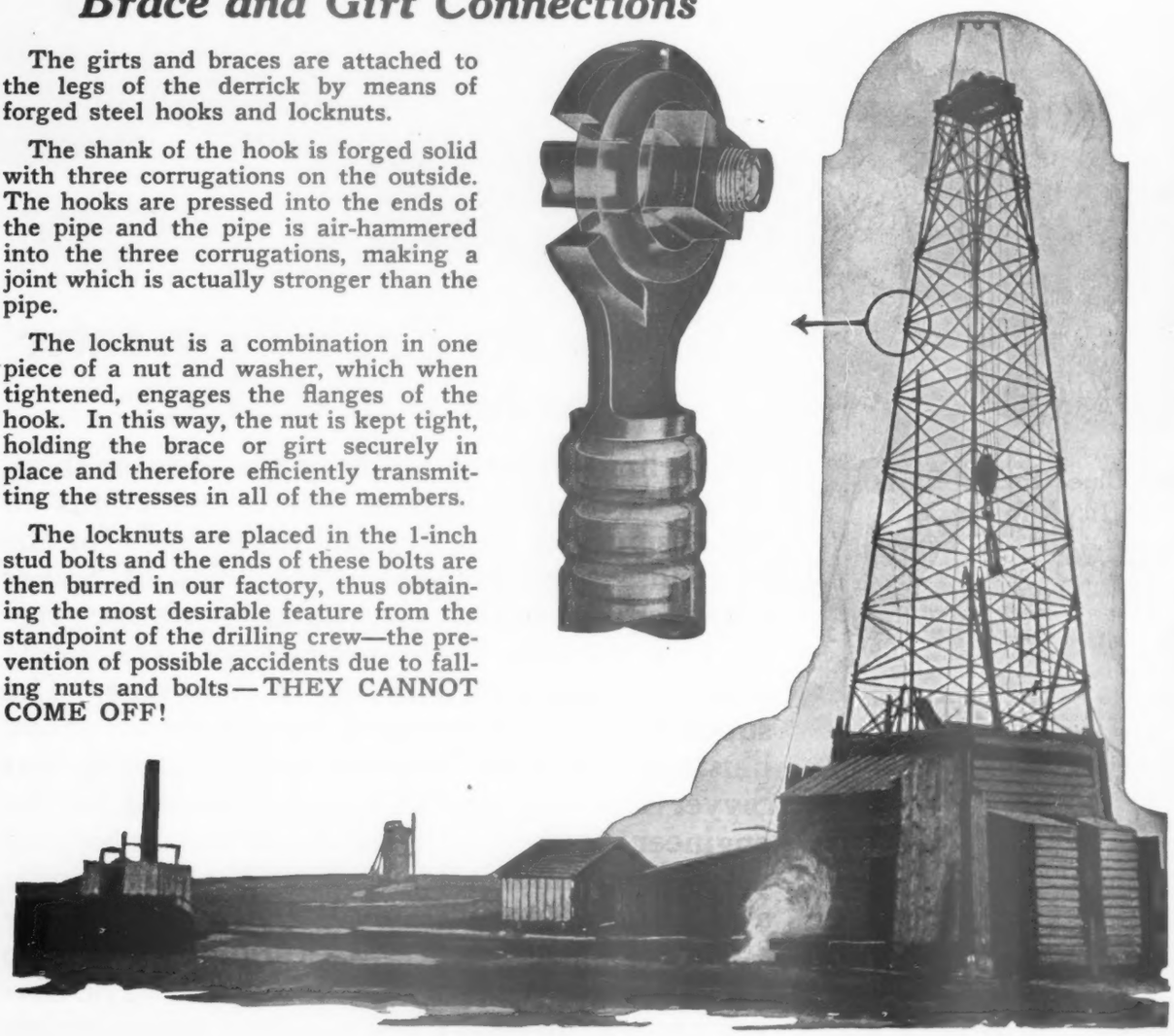
Brace and Girt Connections

The girts and braces are attached to the legs of the derrick by means of forged steel hooks and locknuts.

The shank of the hook is forged solid with three corrugations on the outside. The hooks are pressed into the ends of the pipe and the pipe is air-hammered into the three corrugations, making a joint which is actually stronger than the pipe.

The locknut is a combination in one piece of a nut and washer, which when tightened, engages the flanges of the hook. In this way, the nut is kept tight, holding the brace or girt securely in place and therefore efficiently transmitting the stresses in all of the members.

The locknuts are placed in the 1-inch stud bolts and the ends of these bolts are then burred in our factory, thus obtaining the most desirable feature from the standpoint of the drilling crew—the prevention of possible accidents due to falling nuts and bolts—THEY CANNOT COME OFF!



Ask the driller who has used one

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One of a fleet of White Trucks in the Service of the Empire Gas and Fuel Company

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WHITE Trucks are business builders. Because of their ability to build business for their owners they have built a great business for their makers. They have done both because they are made right, sold right and kept right.

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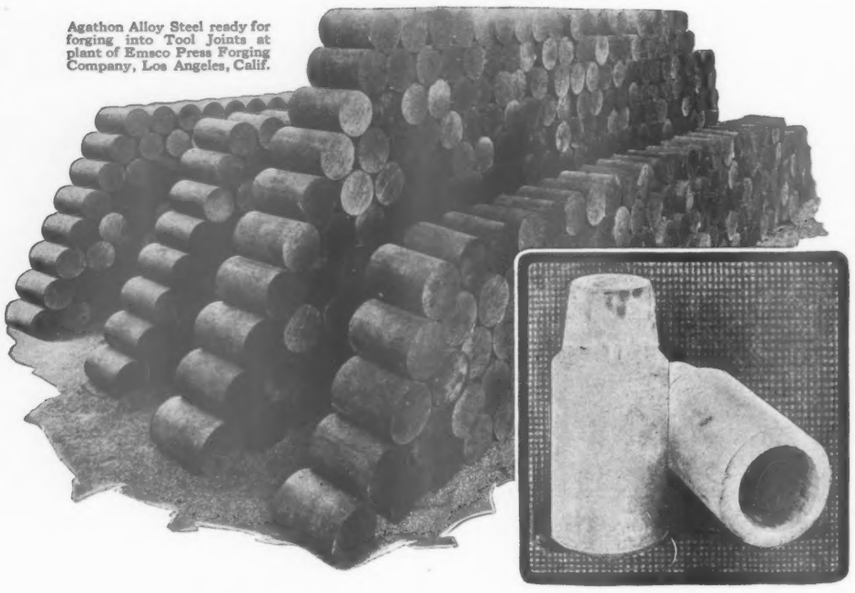
As evidence of their satisfaction with White Truck performance, 15 oil companies have steadily added to their White equipment until now they operate fleets of more than 100 Whites each. Eighty-two oil companies operate 7,762 Whites in fleets of 10 or more. Hundreds of other White Trucks serve the oil industry in fleets of less than 10.

These owners know truck value. Their judgment is your own best guide in spending your transportation dollar.

THE WHITE COMPANY, Cleveland

WHITE TRUCKS



Agathon Alloy Steel ready for forging into Tool Joints at plant of Emsco Press Forging Company, Los Angeles, Calif.

And For Tool Joints, Too

A FEW years ago Agathon Alloy Steels were little known in the oil-drilling industry. Finally these tough, super-steels were adopted for drill bits. Their highly successful performance in this service has resulted in their general adoption for Tool Joints, Jars and other parts of oil-drilling equipment subjected to great wear, stress or strain. If you are not acquainted with Agathon Alloy Steels, send for our interesting booklet. If you have a steel problem, our metallurgists will help you solve it free of charge. Write us.

AGATHON STEELS BAR

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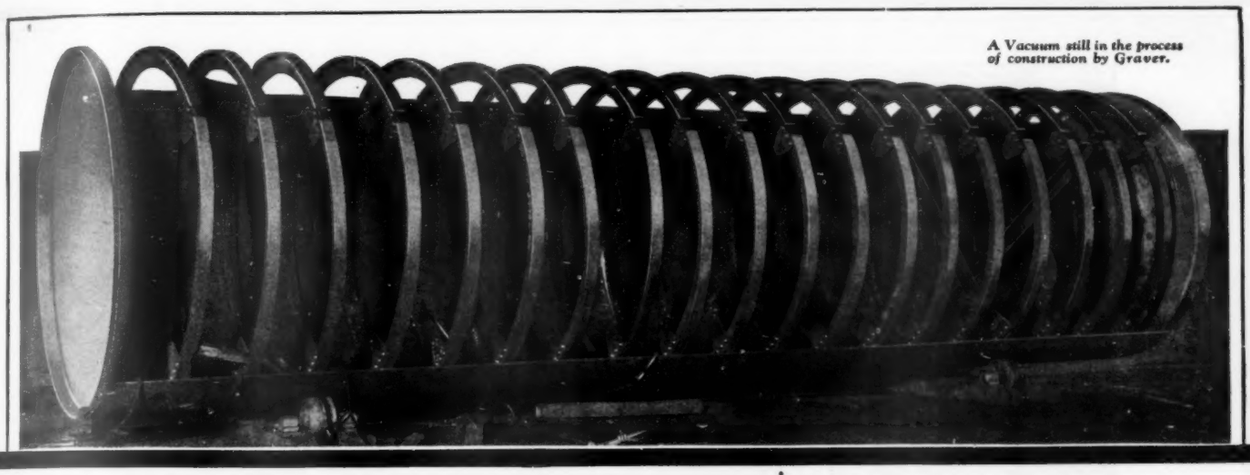
AGATHON ALLOY STEELS



A Vacuum still in the process of construction by Graver.

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WHEN you have Graver install or build a tank, tower, still, agitator, condenser box or any other steel plate equipment, you are gaining the advantages of sixty-seven years of steel construction experience.

During those sixty-seven years of growth, Graver has naturally developed exceptional manufacturing and construction facilities. Coupled with these facilities is an extensive organization that is thoroughly trained in Graver methods and engineering practice.

Experienced field gangs as well as shop gangs are always available for all types of steel plate work. They pay especial attention to the details of construction, design and location which, while perhaps not absolutely essential to operation, help to assure satisfactory service and low upkeep costs.

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Why not ask for quotations on any steel plate equipment you may need?

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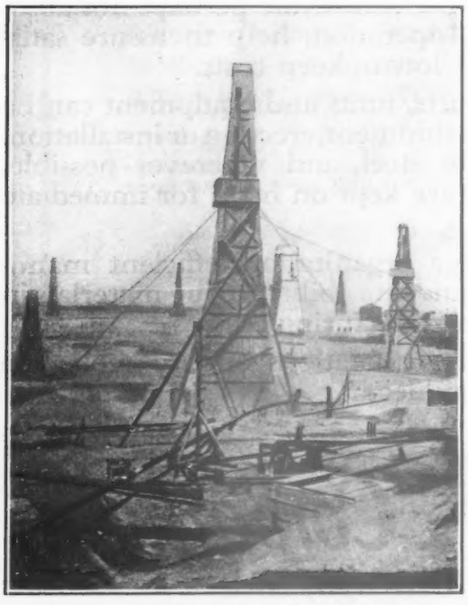

A gasser. Well No. 67 in the Sourachani Field.

A gasser. Well No. 67 in the Sourachani Field.

U.S. TOOL CO. LONG BEACH CAL.

Makes a Straight, Clean Hole

Ever since Ed. Drake rigged up a percussion chisel to a spring pole and punched a hole into the soil of Pennsylvania, starting oil history in America, the cry has been insistent for a drilling tool which would accomplish what the U. S. Disc Bit does. In the old days a deep well depended on "good luck," an abundance of cussing and a whole lot of time and money. Today the deeper levels are easily reached in one-tenth the time with a U. S. Disc Bit. For unusual results it has no basis for comparison. And why? Because the U. S. Disc Bit is correctly designed. It wasn't built simply to cut a hole—it was built to cut a straight, clean hole. It wasn't built merely to make money for its manufacturers; it was built to save money for the producers using it.

Recent years have seen wonderful strides in the oil industry. The U. S. Disc Bit represents a mechanical perfection in keeping with the progress being made. In the matter of speed it is unequalled. Its cutting ability is apparent to any one who will take the time to inspect it. The sharp, keen-edged discs made of forged steel and specially heat-treated to make them tough and durable, have a flat, smooth surface as efficient as the modern plowshare.

The discs turn on collar-bearings held to the shank with a patented locking device. They cannot come off, yet they are simple and easy to assemble. There are no threads to wear out and no bolts and nuts to obstruct the free and easy passage of the mud and debris. The discs of the U. S. Bit are mounted at an angle which gives them a slicing action. Obviously they dig faster than a fishtail which scrapes its way through, or a rock bit which has a grinding action. With a U. S. Disc Bit, it isn't a question of how fast you can dig, it is a question of how fast you can properly mud the hole. The U. S. Disc Bit will function faster than any other type of bit. Its cutting action makes it run to gauge at all times, producing a straight, clean hole. An overshot or fishtail never gets hung up when following a U. S. Disc Bit. The U. S. Disc Bit will outlast and out-perform any other similar type of drilling tool on the market. This claim can be substantiated by the results obtained by hundreds of users. Those who want to reduce their drilling costs to a minimum, cannot afford to do without the U. S. Disc Bit, the fastest, most dependable and safest drilling tool made.

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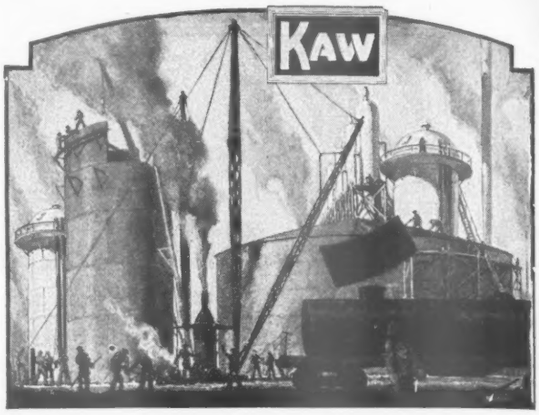
No matter how large or how small your order or what your requirements may be, you are assured quick shipment from KAW.



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Only time can determine how long KAW Products will last, for there are a predominating number of KAW-built high pressure stills, storage tanks, agitators, stacks, run-down tanks, towers, horizontal tanks, etc., that have been serving refiners for years and seem good for years to come.

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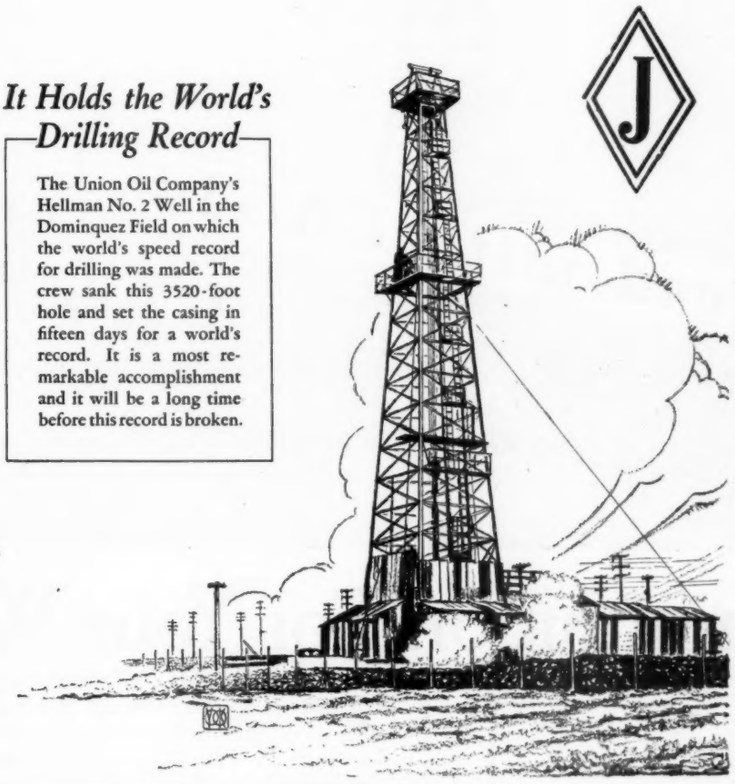

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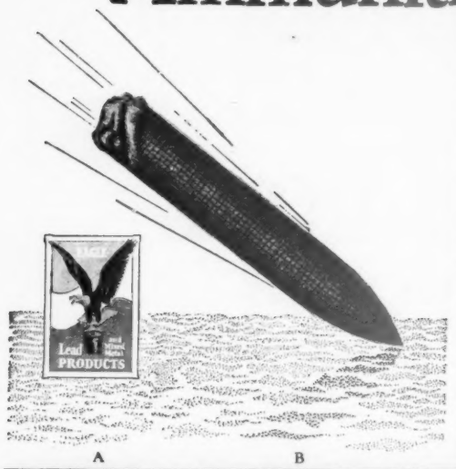

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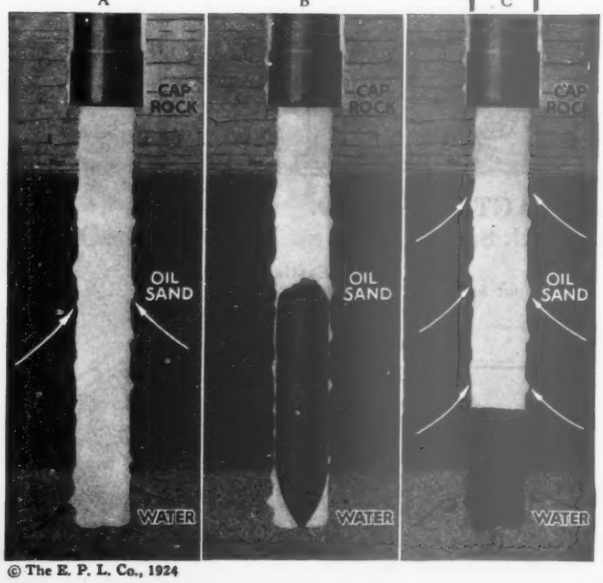

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OCCASIONALLY Oil Wells are met with which will not yield to ordinary plugging practices. During the past year the Petroleum Engineers of The Eagle-Picher Lead Company have worked on a number of such cases.

In every case they found that failure was due either to a lack of knowledge of conditions to be met in the oil bearing horizon or the use of improper methods and materials.

Eagle Lead Wool Oil Well Plugs

Eagle Lead Wool Oil Well Plugs have been developed by The Eagle-Picher Lead Company to meet such conditions.

The use of Eagle Wire Containers makes the use of Eagle Lead Wool even more adaptable and usable for plugging oil wells under *ordinary* or *extraordinary* conditions.

Eagle Wire Containers

Eagle Lead Wool is delivered in 50-pound coils in bags. To finish the cartridge-shaped Eagle Lead Wool Oil Well Plug it is necessary only to unwind the rope-like lead wool, feed and pack it into the Eagle Wire Container of the proper size.

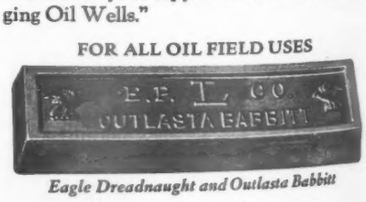
Eagle Wire Containers are made of 4-mesh galvanized wire cloth strongly soldered together. Their use is recommended for plugging oil wells with Eagle Lead Wool as they permit the Lead Wool to pound out through the meshes, filling all crevices and irregularities in the walls of the well, effectively shutting off the flow of water.

SPECIFICATIONS

Style	Size of Container	Size of Casing	Quantity Lead Wool to Fill Container
"A"	3"x 36"	for 4¼" and 4½" casing	25 lbs.
"B"	4"x 36"	for 4⅞" and 5 3/16" casing	40 lbs.
"C"	5"x 36"	for 6¼" casing	55 lbs.
"D"	5½"x 36"	for 6⅝" casing	60 lbs.
"E"	7"x 36"	for 8" and 8¼" casing	75 lbs.

Send for your copy of "Lead Wool for Plugging Oil Wells."

FOR ALL OIL FIELD USES



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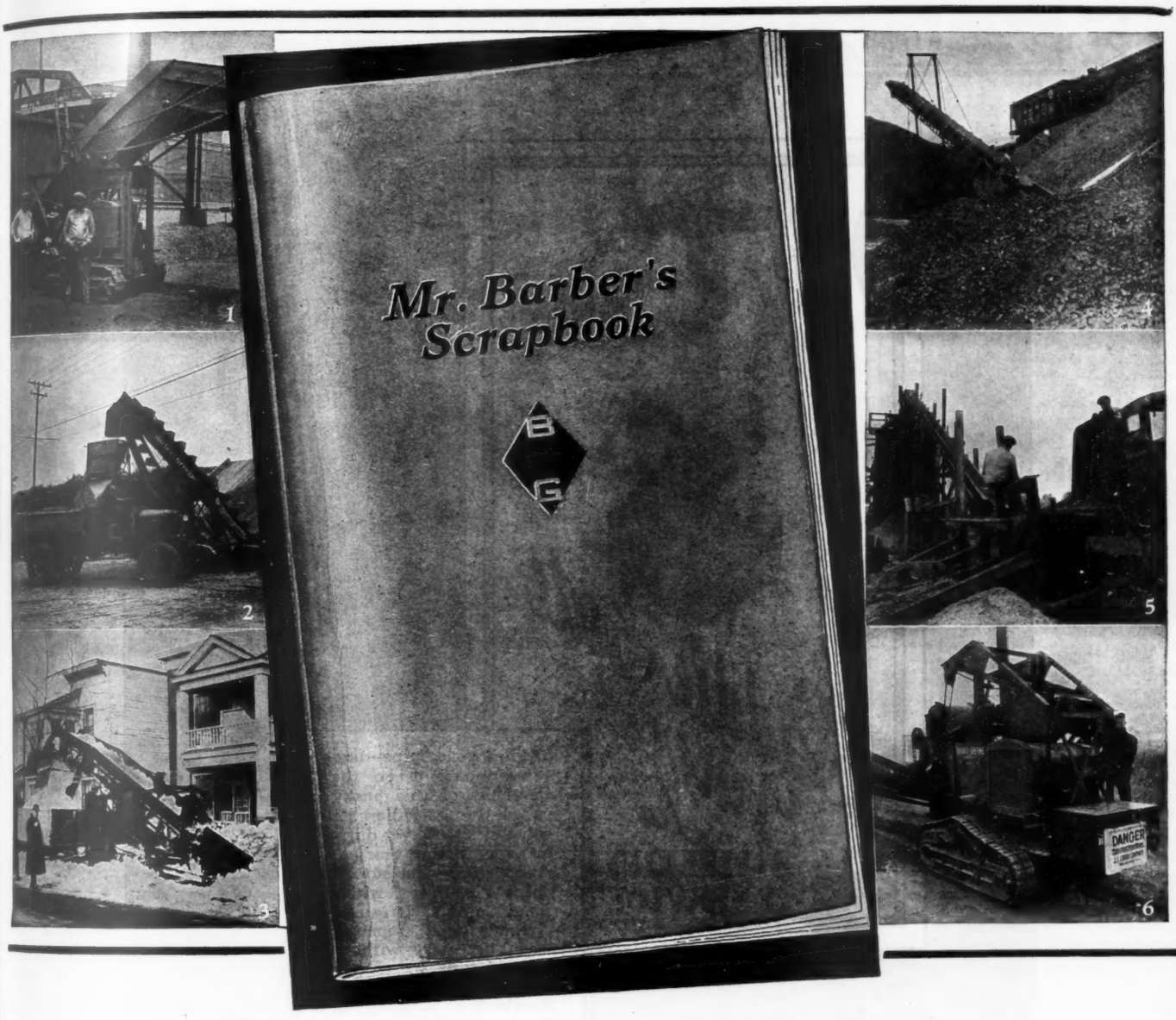

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